

ANNUAL REPORT 1984



Republic of the Philippines

MINISTRY OF AGRICULTURE AND FOOD





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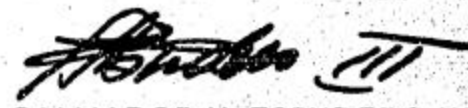


FOREWORD

Looking back, the crop year just passed was a definite turn for the better from the downturn in crop output due to the prolonged drought that we experienced in crop year 1982-1983. Agriculture has proven its resiliency once more, and this is affirmed by a modest 1.2% growth at a time when other sectors and the national economy as a whole declined.

Agriculture has thus offered succor to an ailing economy and has kept afresh hopes for an accelerated recovery. The damages brought by typhoons on crops and animal stock were contained and rehabilitation efforts made up for losses. The country's foreign exchange shortfalls have also been eased by the buoyant earnings of agricultural exports. Coconut oil prices, for instance, peaked to an all-time high in world markets.

The record set by agriculture at a time of adversity redeems the expectations of our people. In order to sustain the hope enkindled, we must continue to build on the gains achieved.


SALVADOR H. ESCUDERO III
Minister

The Ministry of Agriculture and Food Objectives, Policy Directions and Programs

The primary body handling all agricultural activities is the Ministry of Agriculture and Food. It was established to accelerate agricultural development along the objectives of increasing production and productivity and farm income, and improving the overall condition in the countryside. It seeks not only to increase food production, but also to expand exports and the production of imports substitutes.

Calendar Year 1984 was another year of economic challenges for the entire country as all sectors of the economy remained depressed, in the wake of adverse global market conditions and the subsequent recession which caused a sharp decline in the prices of the country's once buoyant traditional export products.

Despite prevailing economic difficulties, however, the Ministry of Agriculture and Food (MAF) has resolved tough problems with more confidence and enthusiasm stemming from the knowledge and experience gained in the course of developing Philippine agriculture to where it is now. In the year just passed, agriculture offered succor to an ailing economy and has served as the lynchpin towards economic recovery. The response to the crisis has proved to be the major factor in helping avoid the serious consequences that might have ensued.

To maintain, however, the momentum achieved by the agriculture sector in the last decade, major policies were made during the second quarter of the year, starting with the restructuring and expansion of the Ministry itself to strengthen it as a policy-making and regulatory body in catalyzing productivity and production in the agriculture sector to provide more food for the country's 53 million Filipinos. The MAF also shifted to price deregulations in selected agricultural products, intensified and maximized its organizational efficiency to promote development in agriculture. Realizing the complementary and symbiotic relationship in the development of agriculture and industry, the MAF formulated the Balanced Agro-Industrial Development Strategy (BAIDS), designed to better achieve the twin objectives, whereby growth in agriculture reinforces the industry's growth, in a manner that the latter's growth also reinforces the former.

To attain the national goals of food sufficiency and food security, agricultural programs were also revised in response to current needs and changing conditions. New programs were undertaken to give more incentives for production, not only to support the recovery drive, but to set food prices at affordable levels as well as insure more income for the farmers.

All along, with its agenda for action in agriculture and in consonance with the major national development goals of sustained economic growth, equitable distribution of income, and improvement of the quality of life, the Ministry has propelled its resources pursuant to the following policy directions:

1. Expand production and step up productivity to increase agriculture's contribution to the balance of payments through export expansion;
2. Attain self-sufficiency in all basic food items including grains as well as fish and meat products, and ensure the availability of requisite food supplies at reasonable prices, with special emphasis on indigenous food products with high nutrient value for the nutritionally vulnerable and deprived population groups;
3. Improve and stabilize farmer's income and welfare through higher productivity, better marketing, and more efficient system of pricing subsidies, and incentives;
4. Enhance landless rural worker's welfare by providing better access to agricultural resources and bigger share of national income through higher returns, intensified resettlement activities and by provision of more gainful on- and off-farm employment; and
5. Carry out a land management policy which will foster the retention of land suitable for agriculture in agricultural use, prevent diversion of such land to other uses, and enhance the security of land tenure.

The above elements of the Agenda for Action in Agriculture constitute the policy and program thrusts of the Ministry for the next three years and beyond. It is expected that their effective implementation will improve the annual growth rate of the agriculture sector and contribute to the national efforts toward optimum production and productivity, export expansion and import replacement, poverty-reduction and better nutrition, and generally improved welfare of the Filipino family.

During the year in review, the Ministry, in its pursuit of optimum development and in support of national priorities, undertook the following programs and projects:



I. RICE PROGRAM

In 1984, the drive to increase palay production was set back by natural calamities. Several typhoons inflicted their toll, while "tungro" infestations affected about 4,000 hectares in 20 provinces. Notwithstanding these natural calamities, palay production for crop year 1984-1985, is estimated at 163.3 million cavans or 4.2% higher than last year's crop (assuming that the second semester crop from January to June 1985 will be normal).

Despite a hefty 100.7 million-cavan main season crop during the second semester of 1984, the buffer stock dwindled to precarious levels. Per capita consumption of rice rose from 89.3 kilos in 1983 to 97 kilos in 1984, compensating for lower wheat consumption due to reduced wheat imports. To beef-up the country's buffer stock, the country had to import rice. Recently, the President launched the Intensified Rice Production Program (IRPP) which seeks to produce an additional 600,000 metric tons of palay in midyear, June 1985, by planting two additional palay crops in 150,000 hectares throughout 20 provinces. The program has been allocated a P450-million credit fund which may be availed of by small farmers for a maximum of P3 thousand/hectare/season at a nominal interest rate of 15% per year.

The 90-day buffer stock concept is now being reviewed with the thought of reducing its time span so as to relieve the country from the pressures of importation. Heightened frequency of palay plantings through IRPP supports the view that the current buffer stock period should be reduced.

The MAF has also started to liberalize market controls. It has increased thrice support price of palay this year, with the most recent support price at P3.35 per kilo. An eventual lifting of price controls is being considered as of this writing.

The Ministry has also focused its efforts in assuring a steady supply of farm inputs, especially fertilizer. For one, it has liberalized the importation allowing the private sector to import fertilizers, even as it mandated the newly created Philippine Phosphate Corporation to provide 60 percent of the country's fertilizer requirements at low prices, based on the production costs of the country's two most efficient manufacturers.

In addition, a Unified Azolla Program is now in full swing. To date, it has established 134 provincial azolla propagation centers catering to the needs of 1,842 community nurseries for inocula.

The policy shift with the most lasting repercussions, however, is the change in emphasis from irrigated to rainfed cropping systems. With the success of the KABSACA project in Iloilo, development and rainfed cropping is expected to gain added impetus. This is evidenced by the proliferation of rainfed rice production projects both in operational and planning stages in Mindanao, Bicol and Eastern Visayas. Both irrigated and rainfed areas are being eyed for inter-cropping and multi-cropping systems development.

II. CORN

The Expanded Yellow Corn Production Assistance Program (EYCPAP) is the centerpiece of the Maisagana Corn Production Program, which has increased quadrupled to date the hectareage planted to hybrid yellow corn, from about 10,000 to over 60,000 hectares. At year's end, EYCPAP has utilized P193.94 million out of the P230 million Yellow Corn Fund, a part of the National Productivity Program. Most of the loans extended to yellow corn farmers at P4,800 per hectare for EYCPAP, and P2,500 for Maisagana, and at an interest rate of 15 percent for both, have been released in four production zones composed of ten provinces in Northern, Southern and Central Mindanao. Necessary infrastructures are now being laid out to meet the 3-year timetable for shipping the first batch of exports.

By the middle part of 1985, the sugar areas shall have been converted into corn lands are expected to reach 40,000 hectares — bringing the total EYCPAP to 100,000 hectares. A total of 318,000 metric tons is expected to be produced in these areas by the end of Crop Year 1984-1985. About 400 MAF production technicians shall provide technical assistance to yellow corn farmers.

Corn production for Crop Year 1983-1984 rose to 3.35 million metric tons, which is 220 thousand metric tons or 7 percent more over crop year 1982-1983. Consequently, this caused a drop in yellow corn importations from 520,000 metric tons in 1983 to 180,000 in the same year.

Since corn requires only residual water, 25 percent of insufficiently irrigated rice lands are being eyed for growing corn as a second crop. Cropping systems are now under study to operationalize this scheme. Imports and exports are now liberalized to allow the government to phase out its exclusive role on this trade.

III. LIVESTOCK, POULTRY, AND DAIRY PRODUCTS

Within a period of two months in mid 1981, prices of poultry and hog products were raised at least twice to enable producers to recover their increasing cost of production. As prices of these commodities were stabilized, MAF saw it fit to completely lift price controls on these commodities. Reduced purchasing power, how-





ever, took a toll on effective demand. In many instances, retail prices of pork and poultry products were selling below prescribed ceilings even before their delisting from price control. Pork and poultry producers eventually cut back on production. Pork production declined by 0.6 percent while poultry production dropped by 18.6 percent. Total meat production fell by 6.6 percent; but bright spots cropped up in the beef and carabeef sub-sectors with an upswing of 9.4 percent over the previous year. Chevron (goat meat) production also posted an encouraging 4.8 percent increase.

To sustain the momentum of the hog and poultry industries and recover from the current downswing, short-gestation crops like corn, soybeans, cassava and sweet potato were prioritized as feed ingredient substitutes. Feeds accounted for about 70 percent of production cost in the pork and poultry sub-sectors.

The emphasis on livestock development has been on ruminants, which can thrive on cheap feeds which are locally available in great quantities. The MAF's commitment on this new thrust is embodied in its Bakahang Barangay and Kambingang Barangay, as well as the Kalabaw ng Barangay programs.

Bakahang Barangay — Launched in September 1977, the Bakahang Barangay has, as of this year-end, financed 391,623 cattle fattening involving 210,678 small farmers with loans amounting to P989 million; and 2,540 breeders for 1,244 farmers with loans amounting to P8,770 million.

Kambingang Barangay — Commenced in December 1979, Kambingang Barangay has so far financed 89,308 goats for 15,753 farmers through loans totalling P23,332 million.

Kalabaw ng Barangay — the most recent ruminant program, was launched in May 1983. To date, some 668 farmers have borrowed P2,676 million to finance their working animals.

The animal dispersal program of the MAF, otherwise known as the Commodity Loan Program, dispersed 558 head of cattle, carabao, goats and swine during the first nine months of 1984.

Backyard dairy production in the country is also being intensified with 1,006 dairy cows dispersed to a total of 22 cooperatives in Northern Mindanao and Southern Tagalog. The program is geared to produce 15 percent of our dairy requirements in 10 years.



IV. FISHERIES

Fishery products are now being looked up as the country's cheap source of protein. To this end, infrastructural support for expanded fish production are now being constructed (e.g., fish ports, cold storage facilities and processing plants) to rationalize supply distribution and ensure municipal fishermen better prices for their produce. Export of fresh and processed fishery products is also being pushed.

To supplement municipal fish catch, incentives for greater private sector involvement in aquaculture production are being lined up. Sea-farming is also in full steam with 40 demonstration centers implemented nationwide during the year. Oysters, mussels, seaweeds, crabs, shrimps, pearls, lobsters, and finfishes are produced from these centers.

In fingerling production, 43.4 million fingerlings were produced during the year. Of this, about 80 percent or 34.5 million were dispersed to communal bodies of water such as lakes, dams, and rivers.

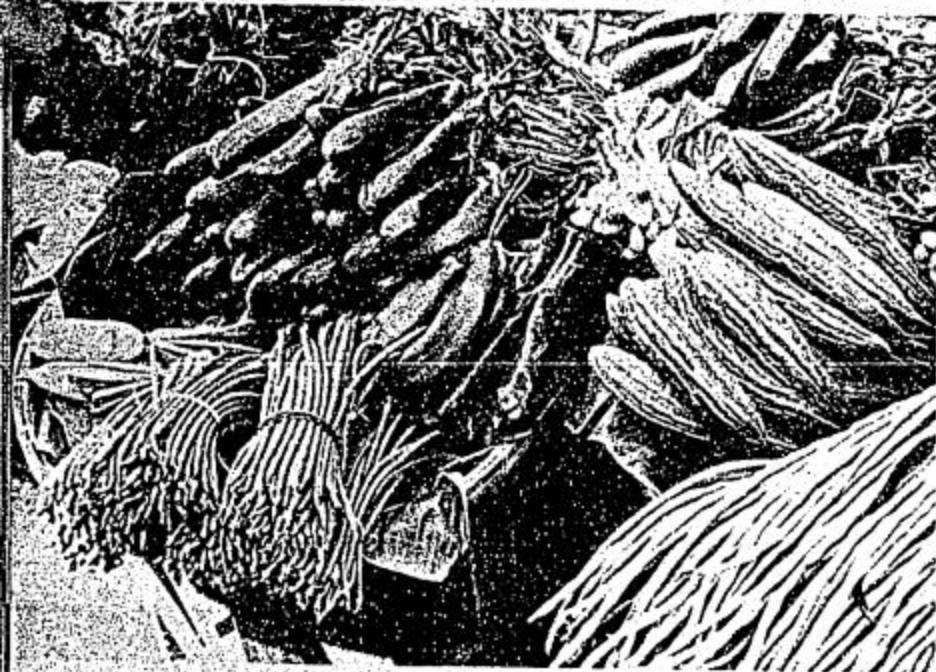
Fishery production through livelihood projects under the KKK got a boost through the release of P15 million for 65 projects.

For the Biyayang Dagat program, a total of P2.8 million has so far been released to 250 fishermen.

V. OTHER FOOD CROPS

During the year in review, the Ministry continued promoting the expanded production of vegetables and other food crops. The *Gulayan sa Kalusugan* (GSK) sustained the promotion of garden crops such as beans, cabbage, garlic and onions. High protein legumes, such as mungbean and peanuts, have been promoted as second crops after rice.

Efforts to reduce seasonal fluctuation of vegetable prices centered on the improvement of storage and processing facilities.



VI. COCONUT AND SUGAR

- a. *Coconut* — Initiatives for augmenting farmer's income went hand in hand with the phenomenal upswing in coconut export prices. Coconut oil peaked to an all-time high of 62 cents per pound last June. This was the highest monthly average ever recorded in the coconut industry. Previous to this, the monthly average high was 56.81 US cents per pound in April 1974. Although the country suffered some decline in export volume of coconut products, this was offset by the phenomenal upswing in prices.

From January to November, earnings from coconut export reached \$740.2 million, up by 16.9 percent over the \$633 million earnings in

the same period last year. Total volume decreased by 32.02 percent, from 1.53 to 1.04 million metric tons for the corresponding period in 1983. Due to the spate of typhoons which damaged coconut plantations, particularly in Surigao, coconut production this year has been estimated to drop to 14 million metric tons from the original target of 17 million metric tons.

On top of the export boom, small farmers and landless laborers have been enjoying the favorable outcome of our coconut productivity program. From a pilot project of 100 hectares in 1982, the National Coconut Intercropping Project expanded its coverage to 1,300 hectares of coconut lands intercropped with corn, peanut, mongo, eggplant, and other crop. Aside from cash crops, raising of farm animals is another option. The additional net earnings derived by a coconut farmer from such cash crops average at P5,682.82, in addition to the income realized from existing coconut trees.

As a special program for yellow corn production under coconut plantations, the coconut replanting program is being resumed, with financing to be derived from the 10 percent of the export tax on coconut products.

As an alternative to the fluctuating returns from trading of traditional coconut products, the government is pushing the development of new coconut products, such as coco-diesel and poly-unsaturates for soap, edible oil, and margarine to help insulate the industry from the highly volatile world markets for traditional coconut products.



b. *Sugar* — The continuing malaise occasioned by miserably low sugar prices in the international markets also points out the need to diversify our raw sugar exports to processed products and by-products forms. The current market price of four to five US cents per pound of sugar is way below the Philippine production cost of 12 US cents per pound. Market doldrums afflicting the industry could have caused the production decline of 5.6 percent, 2.46 million metric tons in crop year 1982-1983 to 2.32 million metric tons in crop year 1983-1984.

An immediate measure to help financially distressed sugar producers cope with the industry's downturn is to shift to crop diversification. This opportunity is enhanced by the implementation of the Expanded Yellow Corn Production Program in sugarcane areas, which provides both credit and input assistance to sugar producers.

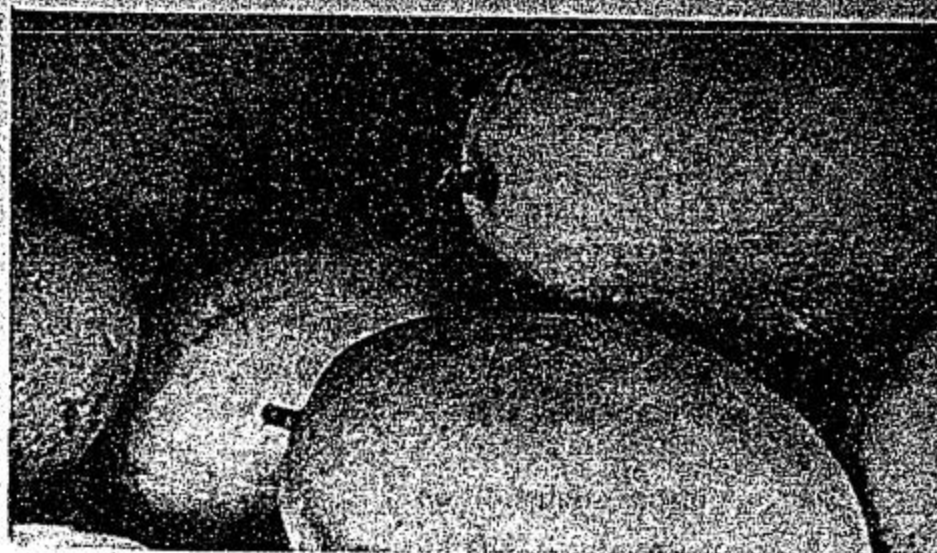
More significantly, the lifting of price controls on sugar trading provides more leeway for the financially straitened sugar producers to bail themselves out of the difficulty.

Current cutbacks in production may serve as a relief from the adverse impact of low world sugar prices, but there is evidently a need for viable alternatives over the long-term. Even as the country moves toward crop diversification and by-product utilizations, it should not stop its efforts in negotiating for a new international Sugar Agreement. The urgency of this imperative is underscored by the forthcoming expiration of the long-term contracts negotiated by NASUTRA with the sugar-importing countries, where the Philippines sells 50 percent of its exportable sugar.

VII. OTHER COMMERCIAL CROPS

(Non-traditional Crops — mango, citrus, coffee, cacao)

Recognizing the volatile markets for traditional export crops, particularly sugar and coconut, the promotion of non-traditional export crops becomes all the more important. Fruits, for instance, are the most promising crop export. For mango alone, the exports in dollar value have been rising by an average of 22.83 percent since the 70's. Mango export went up from \$1.1 million in 1970 to over \$9 million in 1983. Earnings from citrus extracts are also forecast to maintain an upward swing, especially with the



resolute implementation of our export rehabilitation program.

The Philippine's cacao is a promising non-traditional export to augment the earnings from coffee exports. Cacao shipments to West Germany attest to the acceptability of Philippine cacao in the export markets and the potentials of cacao as a major export.

For coffee, the quota for Philippine exporters has been increased from 470,000 bags to 500,000 bags this crop year by the International Coffee Organization (ICO). The country's coffee production is expected to increase by one million bags (60-kilo coffee beans per bag) this crop year.

Traditional Export Crops (Tobacco and Abaca)

The competitiveness of traditional exports, such as tobacco and abaca, depends much on the success of our research efforts to achieve breakthroughs in cost-reducing production technology. Abaca, which is the leading natural fiber, accounts for more than 90 percent of all Philippine fibers baled and traded during the past ten years. The fiber industry earns roughly \$75 million yearly in foreign exchange.

Within five years, these earnings can be easily raised to \$100 million annually under our program of increasing hectareage and productivity of existing plantations. Further processing of abaca fiber into exportable articles, such as specialty products, salago, and buntal pulp could even double up export revenues to around \$200 million.

To expand the export inroads of fiber exports, the MAF has adopted strict measures to impose quality control. The Fiber Industry Development Authority (FIDA) inspectors are now held personally accountable for any mis-

classification in grading of fibers. They are required to stamp their assigned code numbers in the cloth tag attached to each bale.

Considering the urgency of filling up supply shortages, particularly among traditional export markets, the MAF is now undertaking a crash rehabilitation program to promote the use of high-yielding varieties (HYVs). The FIDA has already identified some 15,000 hectares of suitable plantation areas for this purpose.

Import-Substitution

In line with the feeds substitutions program, the MAF is now pursuing a 3-year accelerated national soybean production program with a target of 130,000 hectares in 15 provinces by the third year. With improved technology, the Ministry expects yield levels to increase from 1.3 metric tons per hectare in 1984-1985 to 1.8 metric tons per hectare in 1986-1987. In three years, 49 percent of our soybean requirements for animal feeds is projected to be locally produced.

In addition to soybean, the Ministry has also been encouraging the use of rootcrops, such as cassava and sweet potato as feed ingredient substitutes. Cassava, which has long been used by our backyard raisers as feed ingredient, can substitute up to 15 percent of the protein content of commercial mixed feeds.

To save on costly fertilizer imports and help our farmers cut input costs, the MAF is promoting the combined use of inorganic chemical and organic natural fertilizers. Azolla, an organic fertilizing agent, can replace up to 25 percent of nitrogen content of the chemical fertilizer being used for the main season rice crop. The unified azolla program aims to meet the demand for azolla through its targetted 68 provincial propagation centers by catering primarily to 3,000 community nurseries.

Production Support Systems

1. **Research** — New technologies are now under validation, and fine tuning to local conditions in each of the country's 12 Regional Integrated Agricultural Research Stations (RIARS).
2. **Fertilizers** — Entities other than the four major importers are now allowed to import fertilizers, using the \$130 million credit line extended by the Asian Development Bank Agricultural inputs loan. Ex-warehouse and

retail price ceilings are being enforced taking into account the production costs of the two most efficient local fertilizer manufactures.

By 1985, the Philippine Phosphate Fertilizer Corporation (PHILPHOS) will be fully operational—assuring the country of a continuous supply of almost all its fertilizer needs with the exception of urea and potash.

Research on indigenous organic fertilizer gains headway. The unified azolla program is in full swing, with propagation farms slated to be launched soon in Laguna. Over the next year-and-a-half, a million of hectares is being targeted by the Azolla Propagation Program to be spearheaded by 2,300 technicians who shall be trained to establish at least one nursery each.

Mobilization of Financial Resources

To ensure the farmer's access to institutional credit, several measures are being undertaken, such as rehabilitation of rural banks through the capital build-up and arrears, conversion scheme, as well as guarantee payment programs.

Credit terms were also relaxed for farmers. Supervised non-collateral loans were made available at concessional rates (averaging 15 percent per annum) on loans for crops prioritized by the National Productivity Program. Non-traditional credit sources were also tapped as conduits for financial assistance to farmers. This scheme involves inputs suppliers, such as the Planters Products, Inc. and the Ayala Agricultural Development Corporation, serving as channels of credit from banks to farmers.

Incentives for production are also being reviewed in line with the program to consolidate all agricultural incentives to support the recovery program.

Institutional Changes

Planning and implementation of programs for agriculture have been bolstered through the integration of agencies in agriculture, mandated by Executive Order No. 967. This Executive Order placed the Bureau of Fisheries and Aquatic Resources (BFAR) and the Philippine Fisheries Development Authority (PFDA) under the umbrella of the MAF. Prior concurrence in the issuance of pasture leases was another added authority. Also, the Minister of Agriculture and Food now sits in the governing boards of the coconut and sugar industries.

Accomplishments of the Ministry of Agriculture and Food Regional Offices

REGION I (Ilocos Region)

True to its commitment to uplift the farmer's plight, the Ministry of Agriculture and Food in Region I with a work force of 2,000 field workers, redoubled its efforts in bringing the required agricultural services aimed at farm productivity and increased income.

During the year in review, rice production in Region I registered an overall production of 764,640 metric tons from both the programmed and unprogrammed areas from 328,600 hectares tilled by some 392,336 farmers.

In corn production, the region accounted for 64,440 metric tons produced from 69,710 hectares. The Maisagana Program, which was participated in by the provinces of Pangasinan, Ilocos Norte, Ilocos Sur and Abra recorded a total production of 5,667 metric tons from 2,236.5 hectares.

Rice-Fish culture, on the other hand, chipped in with 21 metric tons of both rice and fish.

The livestock and poultry program was vigorously pursued not only in keeping with the government's drive for better health through good nutrition, but also in response to the country's export and domestic needs. A total production of 71,976 metric tons of meat and poultry was attained from 5,419,077 animals and birds slaughtered. It directed its efforts towards the development and management of forage and pastures, animal dispersal, artificial insemination, livestock and poultry immunization, diagnostic and treatment of large animals, and animal feed control. In forage and pasture development, a total of 40.5 hectares was planted to legumes, grasses, cassava, sweet potato, ipil-ipil and other feed grains.

To improve and upgrade the genetic capacity of its livestock, its breeding stations and centers produced 272 animals consisting of cattle, goats, swine, horses and ducks to add to its existing stock; while 696 animals of varied species were dispersed to farmers who participated in the MAF's dispersal program. In artificial insemination, no less than 8,726 animals mostly cattle, carabao and swine, were inseminated, which produced a total of 46,375 offsprings.

The region experienced no serious animal

disease outbreak during the year except for some sporadic and minor cases of HMD, hemsep, blackleg, hog cholera, swine plague, avian pest, fowl pigeon pox, and rabies which were given immediate treatment and placed under control. Animals vaccinated totalled 32,708 against HMD; 22,846 against hemsep; 8,296 against blackleg; 86,382 against hog cholera; 1,174 various diseases; and 1,025 animals vaccinated against rabies. It also diagnosed/treated 50,003 ruminant and domestic animals for various diseases. Animal feed control services registered 270 feed samples collected and analyzed with 124 results monitored and 1,374 feed specimens were collected and examined. There were 641 feed establishments registered and financed. A total of P17,627 registration fee was generated from these feed establishments.

Vegetable production in this region, which is classified into leafy, root and fruit vegetables, was given top priority, it being the main source of income of small farmers or producers. With no less than 32,342 hectares cultivated by 141,828 farmers, total production reached 298,202 metric tons. Fruit production also reached 28,346 metric tons from 281,986 hectares planted by 62,096 orchard farmers.

The legume and rootcrop production programs, on the other hand, turned out a corresponding output of 35,372 legumes from 37,919 hectares cultivated by 15,482 farmers and 157,405 metric tons of assorted rootcrops like white potato, sweet potato, cassava, gabi and tugui, cultivated by 51,353 farmers.

Campaigns on nutrition education, homeyard food production, prevention of malnutrition and rehabilitation of malnourished children were intensified. About 29,950 families were recipients of improved nutrition instructions while 73,776 families were likewise taught home management practices by home management technologists (HMTs) assigned in the barangays.

With 176 HMTs now fielded throughout the region plus the active participation of 6,500 active mothers chosen as contact leaders due to exemplary services rendered to rural improvement clubs (RICs), some 30,390 infants and 38,428 preschoolers were subjected to malnutrition prevention activities, such as weighing (operation timbang - OPT) and feeding programs (insumix feedings). Mothers were taught proper food handling for better nutrition as well as family planning methods and encouraging lactating mothers to breastfeed their babies. On the other hand, there were 149 insumix centers established throughout the region during the year in addition to the 924 previously established, which catered to the needs of 43,829 infants and malnourished children.

Aside from encouraging farmers to raise crops, poultry and swine in their backyard, some 54,686 families participated in selective homeyard food production designed to produce cheap, easy-to-grow calorie and protein-rich food. On this aspect, about 499 KPMS plants (kadios, papaya, malunggay ang seguidillas) were planted. Fruit and vegetable production accounted for 158.4 kilograms and another 364.5 kilograms were converted as processed food; while backyard animal raising registered 22,880 for poultry, 27,931 for swine and 1,504 for goats. Income-generating projects like clothing, handicrafts and foodcrafts produced 11,659 pieces, 14,971 pieces and 4,408 pieces, respectively, where 8,770 families were assisted by no less than 200 home management technologists (HMTs).

In keeping with the government's effort to provide support to small producers thru supervised credit, the region embarked on a vigorous cooperative development program to instill self-sufficiency and foster economic, as well as social growth among its clientele. At year's end, 2,223 Samahang Nayons (SNs) have already been organized with a total registered membership of 103,551. This year's cooperatives savings and capital build-up amounted to 34,662,694.24. Most SNs affiliated to the cooperatives development program of the Ministry are engaged in economic business activities. There are now 20 millionaire cooperatives in the region with a total membership of 31,981, assets of which amount to P39,482,207.21.

As part of the region's seed production and distribution activities, a total of 900 hectares with the active participation of 122 seedgrowers was devoted to the production of certified seeds of rice, corn and mungo. From this hectareage, 29,490 cavans of high-yielding rice varieties, 735 cavans of IPB variety I, and 30 cavans of mungo seeds were produced. Except for the 500 cavans of HYVs exported to other countries, this year's production was solely utilized to supply seed requirements of farmer-cooperators affected by "Typhoon Maring". Seed distribution under "Operation Seed Recovery" accounted for 1,563 cavans of palay, 4,380 kilograms of peanut, and 650 kilos of mungo seeds which were sold to farmers at subsidized prices. Plant material production and distribution, on the other hand, accounted for 230,024 pieces of sexually and asexually propagated plants produced with a distribution tally of 463,289. (Additional distribution was taken from its 1983 production). The Paoay Lake Development Project in Ilocos Norte also produced a total of 144,150 ornamental plants, 116,500 ipil-ipil seedlings and 18,418 fruit trees as planting materials.

As regards crop protection, the implementation of the economic threshold level (ETL) in detecting pest population and degree of infestation was proven to be very effective in determining control measures against pests and diseases, where activities were centered on no less than 250,000 hectares planted to 145,698 fruit trees. The Surveillance and Early Warning System (SEWS) were also directed to 3,428 hectares of ricelands where the degree of infestation was recorded below the economic threshold level (ETL). Agronomist stations were likewise utilized to record typhoons and low depression areas where preventive measures on forthcoming calamities brought about by strong winds and typhoons could be fully implemented.

Supportive to the MAF's thrusts and programs towards the attainment of farm productivity, better nutrition and increased income are the region's soils services development projects on land management particularly on land classification, soil and water centered on land capability, suitability classification and map production services, updating soil fertility maps, water impounding projects and soil resources conservation and management. There were 120 soil samples analyzed in support to climatological studies in watershed areas for integrated area development and related needs; 4,549 hectares classified for land capability and suitability studies; and 70 soil base maps produced. A number of studies on water impounding sites were also conducted during the year, with 9 sites also identified for packaging, covering an area of 1,328 hectares envisioned to benefit some 502 farmers. To date, there are 8 functional water impounding projects (WIPs) in the region.



REGION II (Cagayan Valley)

In 1984, rice production under the Masagana 99 program and rice sustaining areas in their region registered an overall production of 947,270 metric tons from an area of 367,820 hectares, or an increase of 20.5 per cent from last year's production of 786,400 metric tons. This upswing was attributed to increase of irrigated hectareage plus the absence of calamity during the year. There were 279,225 farmers assisted by farm technicians.

Corn production both under the Masagana and unprogrammed areas recorded a total production of 301,080 metric tons, or an increase of 30.9 per cent over last year's output of 230,060 metric tons. Hectareage involved in corn production was posted at 302,360 with 98,816 farmers engaged in the endeavor.

Although promotion and development of livestock and poultry industries in the region were vigorously pursued, decrease in poultry and livestock population was noted, except for swine which increased by 9 percent. This decrease in population was attributed to low crops production brought by drought and typhoons in some areas of the region during the last two years, and further aggravated by the high cost of feeds and spiralling prices of commodities, thus backyard/commercial raisers were forced to sell their animals and some to stop production. However, availing of the supervised credit under the Bakahang Barangay, Kambarang Barangay, Babuyang Barangay and Manukang Barangay programs, some 3,202 farmers produced 1,122 cattle (breeding and fattening), 255 goats, 1,449 swine, and 3,905 birds. To upgrade the quality of animal stock and increase meat production, swine and goat were bred artificially and naturally in its regional breeding stations and stock farms. From this operation, some 40 cattle, 194 swine, 58 goats and 11 other animals were produced. This output is considered low in terms of accomplishment due to inadequate funds for the purchase of feeds, so much so that some livestock breeders had to be culled, dispersed or replaced. Artificial insemination services, however, turned out 3,795 swine and 393 cattle inseminated, producing 14,850 swine offspring and 636 calves.

Livestock dispersal was given impetus especially in depressed areas where stocks were extended to farmers who did not have the needed capital to start a project. Animals dispersed by specie accounted for 404 head of cattle, 233 swine and 144 goats. Supportive to the beef/carabeef program is the pasture and forage development, activities of which were geared to the production of recommended

pasture legumes and grasses. At year's end, the region was able to produce 1,306 kilograms of seeds and made available to interested and deserving farmers. Vaccination of large animals against hoof-and-mouth disease (HMD) totalled 42,019; hog cholera and swine plague 90,689; fowl cholera, avian pest and fowl pox 480,135; and dogs against rabies 2,818. It also diagnosed 91,031 animals. Animal feed control services registered 656 collected and analyzed. Veterinary quarantine inspection services also were rendered to 123 vessels and 110,454 head of livestock and 110,454 fowls were examined for intra-and-inter-provincial shipment.

In vegetable production, assorted vegetables (including eggplant, tomatoes and garlic) were planted on 1,546 hectares with a total production of 4,782 metric tons. About 3,244 farmers were assisted and served. Insofar as fruit production in the region is concerned, no production figure is available as of this writing because fruits planted under Phase 84-B program areas are still to be harvested. Likewise, the average production figures under the non-programmed areas for 1984 were reported to be much higher than last year's as there was no reported calamity during the year in review. In rootcrop production, like sweet potato and cassava, a total of 5,736 metric tons was produced from 943 hectares. Farmers served under this program numbered 1,025. Feedgrain and legume productions, on the other hand, registered 4,950 metric tons for mungo and 10,990 metric tons for peanut from a total hectareage of 16,517. The combined total production of 15,940 metric tons for mungo and peanut was reported to be three times higher than last year's produce.

In support of the nutrition program, specifically under the malnutrition prevention project (MPP), 10,255 infants were enrolled, bringing a total of participating infants this year to 24,714. It also enrolled 5,513 pre-schoolers to make participating pre-schoolers total to 11,456 this year. Also served were 7,801 pregnant women, 17,586 lactating mothers, and 5,673 mothers accepting family planning methods. There are now 691 insumix centers established, 152 of which were organized this year. Around 9,558 infants were given insumix. On the other hand, there were 393 rural improvement club centers (RICCs) established in the region which catered to the needs of malnourished children. Some 20,440 infants and pre-schoolers benefited from various malnutrition prevention projects. Other activities centered on homeyard food production and income-generating projects. Training sessions and meetings were con-

ducted for homemakers and rural improvement club members with an attendance of no less than 73,440 womenfolk. Families were also encouraged to raise vegetables, poultry and livestock. As a result of the extension campaign on mass planting of vegetables, such as kadios, papaya, malunggay and seguidillas (KPMS), a total of 113,828 trees was planted and 513 kilograms of assorted vegetables and fruits were processed by 42,271 members of the homemakers and rural improvement clubs. Some 117,126 chickens and 10,570 head of swine were raised by 22,983 families. Income-generating projects like hat and basket weaving involving 3,098 families turned out 121,851 pieces.

Anak Bukid members numbering 7,279 scattered in the different provinces of the region likewise raised 2,211 head of large animals, 26,470 chickens, and 96 metric tons of leguminous crops from 518 hectares.

In cooperatives development, activities during the year were concentrated in the promotion, reorganization and registration of Samahang Nayons (SNs) technical assistance; and auditing of coops/SNs. Promotional activities involved series of meetings, campaign for membership and capital build-up, trainings or pre-membership education program seminars. As of December 31, 1984, there were 936 SNs registered, 2 of which were newly registered from the 13 SNs organized, with a total membership of 38,402. There were 9 municipal marketing cooperatives organized of which 5 were registered. Hand-in-hand with these activities were the auditing of 579 SN cooperatives and the examination and installation of books of accounts to 49 cooperatives to further strengthen their operation. Other accomplishments under its cooperatives development program for Cagayan Valley (Special project) were, as follows:

1. Assisted 25 SNs with 3,300 members engaged in economic activities;
2. Conducted 337 trainings designed to improve management work skills of SN/Coop officers and employees, as well as project skills of SN members;
3. Assisted 91 SNs amend their articles of incorporation and by-laws;
4. Conducted 1,651 SN/Coops fund campaign;
5. Assisted 77 SNs establish demonstration projects on poultry and swine raising, as well as cattle fattening.

Production and distribution of seeds and planting materials were vigorously pursued. Seed production of various crops, notably rice, was geared to the Masagana 99 program and carried out by seed growers, as well as in the regional farm/stations

and nurseries. A total of 854.6 metric tons of various classes of rice seeds was produced. However, there was no record as to seed distribution. As regards seed production and distribution in support to the Cagayan Integrated Agricultural Development Project (CIADP), 93.4 tons of seeds were produced, 88% of which had already been distributed. For the year 1984, a total of 283,838 pieces of sexually and asexually propagated plant materials was produced. These plant materials were all disposed of including previous year's output. Number of farmers benefited and served totalled no less than 47,500.

As part of the region's crop protection activities, a significant reduction in various pest infestation was attributed to the effective implementation of the SEWS, under the RP-German Crop Protection Program. This activity covered 206,666 hectares being tilled by 174,687 farmers most of whom were situated in priority food program areas. Rice farmers were alerted on the possible incidence of tungro disease, while corn farmers were advised on corn borer outbreak; hence appropriate pest and disease management practices were immediately employed in threatened areas. By means of the SEWS, the locust infestation that threatened some provinces in the region during the year was placed under control.

Under soil conservation and management 2,444 hectares were surveyed and placed under erosion control and 1,689 hectares under the water impounding project were likewise placed under soil erosion control. There were 56 fertility trials conducted; 137 soil samples analyzed; and 5,129 pockets of soil inoculants produced and distributed.

REGION III (Central Luzon)

As in previous years, rice production continues to receive top priority in the development of the region. In terms of production, its 1984 output registered a total of 1,225,185 metric tons in both the programmed and unprogrammed areas from a total hectareage of 401,280. Number of farmers served and assisted by field technicians registered a total of 307,590.

With only four provinces in the region participating in the regular Maisagana program, namely, Pampanga, Bulacan, Tarlac and Nueva Ecija, corn production this year stood at only 5,880 metric tons from 8,820 hectares cultivated by 2,054 farmers.

The region has continuously intensified its efforts in the development of livestock and poultry industries where gains were made in the areas of Bakahang Barangay and Kalabaw ng Barangay

under the supervised credit program. At year's end, there were 1,521 head of cattle and 220 head of carabaos produced by 945 farmers thru loans from rural banks. Animal dispersal and artificial insemination, being major components of poultry and livestock development, were also intensified. Under the animal dispersal, 347 large animals of different types were dispersed to deserving farmers whose main objective is to start their foundation stock as well as to upgrade their current stock. Livestock production from 4 stock farms and breeding stations produced 122 cattle, 9 carabaos, 148 swine, and 133 goats. These animals will also be dispersed as sources of breeding stock in barangays. ANICARE projects and other institutions to improve the bloodline and upgrade the quality of native stock in the region. As regards artificial insemination, 12,348 head of cattle and 1,103 swine were artificially inseminated. From this undertaking, 79,027 offsprings of swine and 735 calves were produced. The region's 24 semen banks were in continuous operation by providing semen to clientele.

Vegetable and legume production was vigorously pursued. Vegetable production includes the cultivation of cabbage, pechay, eggplant, tomatoes, etc., and its output during the year registered 21,063 metric tons from 2,685 hectares tilled by 3,759 farmers. Although the area planted this year was 26 per cent higher than last year's production was 24 per cent below the 1983 level. Low production was due to typhoons and floods that wrought havoc in the provinces of Nueva Ecija, Tarlac, Zambales and Bataan. Onion production has been the monopoly of the provinces of Nueva Ecija and Tarlac. Area planted totalled 4,541 hectares, but its total production only reached 24,266 metric tons, or a decrease of 30 per cent from last year's production. Legume production, such as mungo, sitao, etc. accounted for 2,396 metric tons, reflecting a 16 per cent decrease over last year's production because of limited input utilization caused by the high cost of fertilizers and chemicals.

In fruit production, like banana, watermelon/melon and citrus, produced a corresponding output of 29,593 metric tons, 12,729 metric tons, and 9,043 metric tons, respectively. These outputs were slightly lower than last year's production due to two successive typhoons that hit the region in 1984.

To cushion the impact on the upswing of animal feed prices, the region intensified its campaign in the commercial production of sweet potato and cassava, which are good substitutes for animal

feeds. At year's end, the region registered a combined total production of 20,140 metric tons (14,088 MT for sweet potato and 6,052 MT for cassava) from the harvested area of 1,384.5 hectares tilled by 4,810 farmers. Around 977 farmers also engaged in the production of other root crops (gabi, tugue and ubi, etc) and registered a total production of 4,914 metric tons.

Campaigns on nutrition education, homeyard food production, prevention of malnutrition and rehabilitation of malnourished children were intensified. To date there were 864 rural improvement clubs (RICs) organized by home management technologists (HMTs) from which the HMTs have developed a corps of leaders to assist them not only in program implementation specifically in the areas of malnutrition prevention projects, but also in rural improvement club children centers (RICCC).

Under the malnutrition prevention project, 820 out-reach barangays with 816 insumix centers, some 34,199 infants were served. With 531 RICC centers organized, a total of 15,073 pre-schoolers were fed and 17,636 mothers were extended services. To increase food supply and augment their income in support to the nutrition program, womenfolk were mobilized to participate in selective homeyard and homelot food production by planting subsidiary crops and raising poultry, swine and livestock on a backyard and/or homelot scale. This measure immensely increased the availability of highly nutritious food and, in addition, excess produce became sources of additional income for the family. From this endeavor, 3,158 metric tons of vegetables, fruits and other crops and 1,402.4 metric tons of meat products were contributed by them to the region's farm yields.

The region's rural youth development program is carried out through the Anak Bukid Clubs. Members are trained and supervised to undertake active roles in developing managerial skills and development opportunities in food production projects and other activities. This year, the 542 AB Clubs with 12,036 members produced 436 tons of food as their contribution to the food production program of the government in Region III.

In the field of cooperatives development, the region's activities were focused in the organization, supervision and auditing of Samahang Nayons (SNs), Kilusang Bayans (KBs), Cooperative Rural Banks (CRBs), and Area Marketing Cooperatives (AMCs). As of December 31, 1984, a total of 1,959 SNs were registered with a total membership of 134,059 whose accumulated funds now total P35,772,589.31. In their efforts to put up

income-generating projects, 332 SNs were engaged in various activities, investments of which now amount to P4,362,843.56. Likewise, the SN-KKK program saw 43 SNs engaged in 42 various prototype projects dealing on crop production, livestock, post-harvest, marketing and trading with a total KKK funding cost of almost P2 million. Forty-two SNs were audited during the year.

There were 16 KBs of various types newly organized/registered, whose total authorized capital, subscribed capital and paid-up capital totaled, as of year's end, P8,110,000, P1,594,000, and P367,619.76, respectively. Total KBs registered in the region, including newly organized as of the end of calendar year are 153 cooperatives with a registered membership of 49,021 and a total asset of P78,955,552.67. Of these KBs, 36 were audited and inspected.

Hereunder is a brief statistical data about CRBs and AMCs in the region:

1. CRBs

No. of CRBs — 4 active (one each in the province of Pampanga, Bulacan, Nueva Ecija and Tarlac)
No. of SN/Coops (as members) 1,075
Total paid-up capital P8,504,667.00
Total Assets. P44,012,341.00

2. AMCs

No. of AMCs — 8 active (two each for Bulacan and Nueva Ecija; one each for Pampanga, Tarlac, Bataan and Zambales)
Total No. of SNs/Coops (as members). 666
Total paid-up capital P3,699,849.24
Total Assets. P15,877,234.53

The region has continuously provided farmers with seeds of high-yielding rice and different seed varieties. Seed production was carried out through the joint efforts of 157 private seed growers in the region and the region's seeds farms/stations. From a total of 2,250.6 hectares planted to palay, some 186,193 cavans of certified palay seeds were distributed to farmers. While in vegetable seed distribution, 326.5 kilograms of assorted vegetables seeds were repacked to a total of 94,704 packets and distributed to 38,531 recipients in the six provinces of the region.

In plant material production, like fruit trees and ornamental plants, 186,476 pieces of assorted sexually and asexually propagated planting materials were produced. There were 87,840 planting materials distributed. Likewise, the region took the initiative to undertake the fruit orchard development during the year where 293 hectares comprising the Sacobia Seed Farm were planted to

fruit trees. By the end of 1984, no less than 9,100 mangoes, 5,205 cashew and 1,600 guavas, together with the 1,200 existing coconut trees have been planted in the farm.

As part of the region's crop protection activities, various pest infestations were significantly reduced because of the effective implementation of the surveillance and early warning system (SEWS) and the constant monitoring of pests and diseases through the establishment of 35 Integrated Pest Control (IPC) projects, situated in 27 strategic places covering 2,017.35 hectares. Some 875 farmers and 69 production technicians were trained on the IPC method.

As regards commodity and plant quarantine, airports and seaports of the region were subjected to thorough inspection. As of December 31, 1984, the number of vessels and planes boarded and inspected, as well as plants, parcels and plant products inspected were: 186 for ships 2,403 for planes, 702 for plants, and 102,410 kilos for plant products.

Soil conservation and development services were vigorously pursued. There were 9,426 hectares under the land capability classification; 14 soil fertilizer utilization, as well as 218 investigation and verification trials undertaken in support to the URARTIP/PAGASA projects.

In support to the unified azolla program, the region established 361 azolla propagation centers and nurseries at a cost of P348,000 for azolla biomass production. These nurseries were able to produce 796 metric tons, 54 metric tons of which were distributed free to 5,213 farmers. Other activities, among others, were in the field of mushroom production, wherein 106 demonstrations were conducted; out of 4,393 bottles of mushroom spawns prepared, 3,418 bottles were distributed to interested parties.

REGION IV (Southern Tagalog and Metro Manila)

Rice production in Region IV for Calendar Year 1984 registered an overall production of 972,940 metric tons from both the programmed and other rice-sustaining areas with a total hectareage of 336,400 hectares. Farmers served reached 279,486.

In corn production, both under the Maisagana and the unprogrammed areas, recorded a total production of 197,325 metric tons from an area of 231,800 hectares cultivated by 26,848 farmers.

As regards the promotion of livestock and poultry industries, accomplishments were made in the areas of livestock dispersal, artificial breeding,

forage and pasture development, animal disease control, immunization, and quarantine and inspection. Under the beef/carabeef development program, a total of 5,864 head of feederstock was acquired and distributed to 4,305 farmers cooperation for breeding and fattening purposes. It may be stated, however, that the dispersion of resource of the livestock program to strengthen other activities of the region nearly thwarted the operation of the cattle herd improvement, a primary critical support activity to the beef/carabeef development. It was only through the solicited assistance of the Livestock Development Council thru its Area Module IV that a very limited smallholder beef cattle breeding project was implemented. With only two area-based technicians, 908 head of cows/heifers were inseminated in the pilot areas of Naujan, Oriental Mindoro, and Tanauan, Batangas. In livestock dispersal which is a measure to enhance the conservation and expansion of the livestock breeder base and establish a framework for the development of a backyard and dairy industry, an aggregate of 6,307 head of cattle, carabao, swine, goats, and horses was dispersed to deserving recipients. Out of this total, 1,102 offsprings were produced, retrieved from recipients and distributed to a new set of farm cooperators. With the region's 30 operational artificial breeding technicians, 11,957 sows/gilts were artificially impregnated with an aggregate output of 66,954 piglets. In its entirety, the total number of livestock and poultry produced by the region during the year follows: 4,917 cattle, 282,375 poultry, 43,798 swine, 694 goats. MAF technicians served 30,477 farmers engaged in this endeavor.

On the other hand, forage and pasture development was intensified by its regional farms/stations. Eight hectares were developed and planted to legumes, grasses and ipil-ipil trees, producing 720 kilos of seeds and 12,676 pieces of seedlings. These



were distributed to commercial ranchers and backyard raisers. As regards animal disease control, specifically liverfluke, activities were mostly concentrated in the province of Oriental Mindoro, not only because it has the widest body of stagnant water which is the breeding place of liverfluke but because there was a very minimal financial support given to the province for the purchase of flukeicide. The project was able to treat 2,309 cattle and carabaos, which was only 56 per cent of the target. Also, the most prevalent communicable and infectious animal diseases in the region, like hemsep, hog cholera and avian pest were checked to the maximum due to regular vaccination against these animal diseases. At year's end, 1,352,736 animals were immunized under the animal health program, and 459,830 head of various animals were treated for various diseases. Quarantine inspection services likewise registered 221,426 head of economic farm animals examined and inspected before shipment to other places.

In vegetable production, a total of 10,853 hectares under the Gulayan sa Kalusugan Program (GSK) was planted to assorted vegetables by 6,307 farmers. This program produced 13,497 metric tons. The number of green leafy, and yellow vegetables growers under the non-financed program reached 44,108 which also accounted for 29,411 metric tons produced from 3,794 hectares. Fruit/root crops, which include the growing of sweet potato, gabi, onions, ubi, etc., had a total production of 80,983 metric tons from a hectareage of 19,693 tilled by 38,199 farmers and fruit/vegetables, which include eggplant, tomato, etc., tallied 25,918 metric tons from 11,478 hectares planted by 19,901 farmers. In fruit production (banana, pineapple, watermelon and citrus), overall output reached 266,762 metric tons from 28,449 hectares cultivated by 30,158 farmers.

Campaigns on nutrition education for pre-schoolers, pregnant and lactating mothers, prevention of malnutrition and rehabilitation of malnourished children, homeyard food production, thru rural improvement clubs, were vigorously pursued. A total of 172 nutrition classes coordinated by home management technologists benefited no less than 218,030 mothers. Aside from the basic concepts of nutrition, rural womenfolk and rural youths were also encouraged to raise vegetables, poultry and swine in their backyards. From these ventures, 1,499,132 kilograms of meat were realized and 1,157,212 kilograms of vegetables and fruits were produced by 205,224 families. Anak Bukid members, numbering 11,008 scattered throughout the region, 637 metric tons of meat, 137.02 metric tons of grains and 627 metric tons of fruits and vegetables were produced.

Under the cooperatives development, the region continuously provided regular supervision, technical and financial support to cooperative organizations and institutions under its coverage. With 40 additional Samahang Nayons (SNs) fully organized and registered with a total membership of 5,564 during the year, there are now 1,407 active SNs with 45,537 bonafide members. There were 146 SNs inspected and another one was audited in terms of finance and management. In the urbanized areas, 84 various types of Kilusang Bayans (KBs), from consumers, credit, service, producers, marketing and multipurpose cooperatives, were organized and registered. Along with this, 69 KB cooperatives were inspected and 13 financial and management audits were conducted by the region's cooperative examiners.

As of year's end, the region's SNs fund collections are as follows:

General Fund	P1,656,019.73
Barrio Savings Fund	3,766,533.45
Barrio Guarantee Fund	1,976,281.45
TOTAL	P7,398,834.63

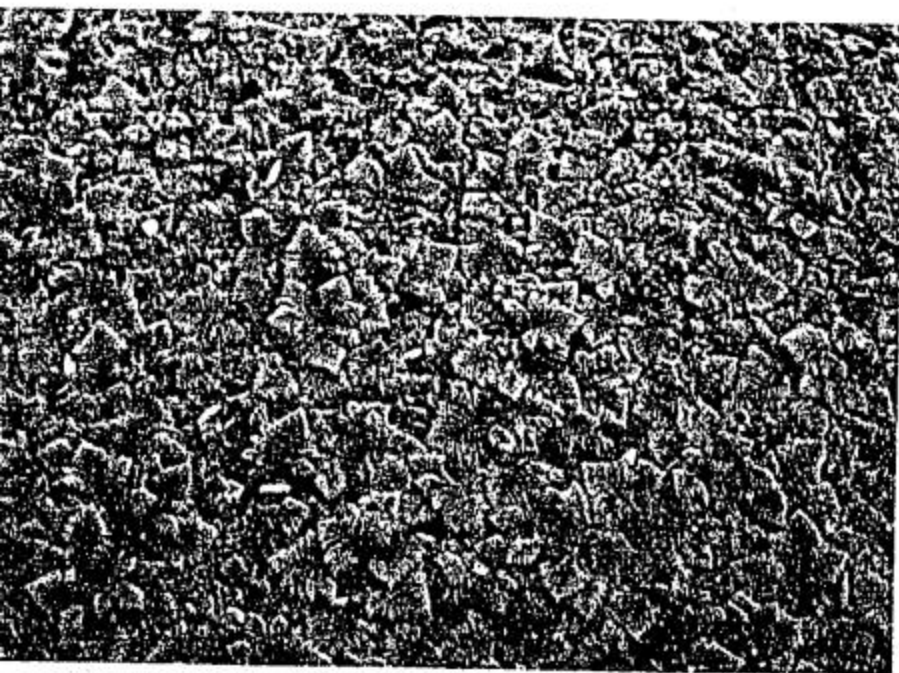
To stimulate and sustain the production of requisite food crops and other agricultural produce with export potentials, selected variety of seeds and planting materials were grown by the region's nurseries and experiment stations. However, certified seeds as inputs to the Masagana 99 were produced by seed cooperators under the supervision of MAF technicians. At year's end, vegetable and legume seed production registered 89,863.17 kilograms with a total seed distribution of 104,499.7 kilograms, the balance of which was taken from previous year's seed stock of 27,573.13 kilograms. Some 667,208 pieces of sexually and asexually propagated planting materials of various crops and ornamental plants from its seven farms/stations were produced. Total distribution amounted to 737,768 pieces. Additional planting materials distributed also came from last year's stock.

Insofar as crop protection is concerned, main activities were geared at preventing and controlling plant pest and disease occurrences. Out of the 680,341.31 hectares surveyed, 205,886.76 hectares were found to be infected/infested, 199,366.39 hectares of which were treated. Of the treated area, 191,135.18 hectares were saved from total damage. Other pest infestations were significantly reduced because of the effective implementation of the Surveillance and Early Warning System (SEWS).

Plant quarantine was intensified thru a vigilant implementation of quarantine rules and regulations. Four seaports of entry: Batangas City, Puerto Princesa City, Siain, Quezon Province, and San Jose, Occidental Mindoro, were likewise strengthened to facilitate the eradication/identification of plant pests and diseases. There were 201 inspection/boardings made on inter-island vessels during the year.

Soil conservation and development continued to be one of its major activities. As a guide to proper utilization of land resources, a soil and land appraisal covering 800,000 hectares was conducted in Quezon Province. Some 8,063 soils maps were reproduced and the results of 332 field trials on soils fertility management were disseminated to farmers. In support to the Food Production and Agro-Energy Development, 7,549 soil samples were analyzed and the corresponding fertilizer recommendations were made available to farmers. There were 133 research studies on technology generation and 55 technology verification trials conducted to improve existing methods of production on vegetables, as well as cropping patterns under rice-based cropping system at different RIARS outreach sites.

In the quest for substitute non-conventional organic fertilizers, the region also launched the Unified Azolla program where 704 production technicians and 3,128 farmers were trained on the propagation and utilization of azolla. Seventeen propagation ponds and 536 community nurseries were constructed, from which 86 tons of biomass were produced and used to inoculate 821 hectares of rice paddies.



REGION V (Bicol Region)

Getting used to the batterings of innumerable typhoons and hardly recovering from the effects of the devastating volcanic eruption of Mt. Mayon during the latter part of 1984, Region V has managed to show significant strides notably in the production of rice, corn, livestock and other crops. For the year in review, rice production both under the Masagana 99 and rice-sustaining areas registered a total of 705,735 metric tons from a hectareage of 332,970. This production is higher than last year's production of 556,620 metric tons, or an increase of 26.8 per cent. Some 146,343 palay farmers were served by MAF technicians.

There was also an increase in the production of corn and feedgrains, which accounted for 115,155 metric tons, compared to last year's output of 114,539 metric tons. This production barely met the demand for human consumption and for the feedgrain industry. The gap is still being filled up by commercial feeds from sources outside of the region. With the Maisagana and the Expanded Yellow Corn Programs now being vigorously pursued in the region, it is hoped that these programs would bridge the gap. Some 44,041 corn farmers both under the programmed and unprogrammed areas were served during the year in review.

The promotion and development of livestock and poultry continue to be one of the region's major activities, emphasis of which were laid particularly on beef/carabeef development program, milk production, animal dispersal breeder stock production artificial insemination, forage and pasture development, animal feed control and diagnostic and quarantine services. Under the beef/carabeef program, 8,391 animals were financed under the supervised credit scheme, with 37,228 farmers assisted in the process. To date insofar as the Bakahang Barangay is concerned, 7350 farmers have availed of P20.2 million loan by rural banks. This program has now a loan repayment of P11.9 million.

An inventory was made by the region of livestock and poultry population and as of December 31, 1984, there were 160,735 head of cattle; 214,223 carabaos; 516,824 swine; 103,002 goats; 344,302 ducks; and 3,272,158 chickens, figures of which signified there was a decrease of 9 per cent from last year's animal population. To hasten, therefore, the development of the industry, some 1,534 head of livestock and 5,731 poultry were dispersed to upgrade and improve the genetic capacity of livestock and poultry in the region. On the other

hand, its breeding stations and stock farms were able to produce 48 head of cattle, 23 swine and 53 goats of superior genetic quality. With respect to artificial insemination, boar and bull semens collected from the region's 18 AI centers/units were used to inseminate 9,014 sows/gilts and 545 cows, which resulted in producing 21,858 piglets and 52 calves.

As in previous years, the nine dairy farms/plants/collection centers/stations in Sorsogon, Albay, Masbate and other parts of the region continue to supply the animal protein needs of its populace. These dairy farms collected and processed a combined volume of 152,996.2 liters of milk. Several thousand liters of these pasteurized milk were made into toned milk and distributed to 24 nutrition projects, benefiting an average of 1,400 children per month.

Forage and pasture development was vigorously pursued. Its regional farms, breeding stations and centers were able to develop and improve 160 hectares planted to legumes and improved grasses, producing 237 kilograms of seeds and 24,738 seedlings, with a distribution output of 1,493 kilograms (additional seeds coming from last year's stock) and 24,419 seedlings respectively. On animal feed control services, 676 feed samples were collected and analyzed; 82 feedmills/dealers registered; 3 commercial feedmills inspected; and a total of 15,837 parasitological and serological specimen analyzed. Vaccinations and treatment of large and small animals totalled 535,850 and 629,865, respectively. On animal quarantine and inspection, 171,092 head of economic farm animals were examined for shipment to other provinces and Metro Manila. Likewise, quarantine inspection services were rendered to 34 local and foreign vessels conveyances during the year.

One of the Ministry's thrusts in the region being relentlessly pursued is the rice-fish culture to augment farmers' income and improve families' nutritional diet. At year's end, 115 farmers were involved in an aggregate area of 57.4 hectares, which turned out a total production of 234 metric tons of palay and 7 metric tons of fish.

About 131,773 farmers were involved in vegetable, fruit, legume and root crop production. These farmers produced 67,078 metric tons (MT) of vegetables, 19,370 MT of fruits and 2,029 MT of legumes from an aggregate area of 20,699 hectares. Rootcrop production showed an increase both in harvest and in area cultivated, from 76,821 MT (15,455 hectares) in 1983 to 151,253 MT (24,755 hectares) this year. This was attributed to

the intensified drive undertaken by the region for sweet potato, cassava and other rootcrops.

Under the nutrition program, intensive campaigns on nutrition education, prevention of malnutrition and rehabilitation of malnourished children, as well as homeyard food production were undertaken. Where malnutrition was prevalent, insumix centers were established. There were 472 insumix centers established during the year where 16,338 nursing mothers and 21,652 infants were served. Training sessions and meetings were conducted for homemakers and rural improvement clubs with an attendance of 87,281 womenfolk. Rural womenfolk and members of rural youth clubs were also encouraged to raise poultry, swine and vegetables in their backyards, output of which registered a total of 26,809 head of large animals and poultry and 1,622 metric tons of vegetables harvested from 115 hectares. As part of the nutrition program and in collaboration with the National Nutrition Council (NNC) and the NEDA, the region likewise implemented the NFAC initiated Integrated Municipal Food and Nutrition Project (IMFNP). From an initial of three provinces covered, it is set to expand its coverage to two more provinces — Masbate and Catanduanes in 1985. It also worked jointly with other government agencies in undertaking its share of activities in the Bicol Integrated Health, Nutrition and Population Project (BIHNPP) of the Bicol River Basin Development Project. These activities are now in its third year of implementation.

In the field of cooperatives development, the region's thrusts were focused in the organization and registration of Samahang Nayons (SNs), as well as supervision, and financial and management audit of SNs/KSNs/Coop/ unions. During the 12-month period, 14 SNs and 34 service, consumers and credit cooperatives were organized and registered, and 92 dormant SNs revitalized. Ten SNs were also assisted in availing of loans under the cooperative development loan fund (CDLF) amounting to P540,000 through the SNAP-KKK project; and 65 SNs and cooperatives were audited. One of the remarkable achievements of this region in the field of cooperatives development was the topping of the two awards given at the national level to 1) the Most Outstanding Samahang Nayan with Economic Activity — the SN of Tuliw, Malinao, Albay; and 2) Outstanding Samahang Nayan with Economic Activity — the SN of Batang, Irosin, Sorsogon.

Crop production and protection activities centered on plant propagation, seed production, cer-

tification, procurement and distribution. From its stations and seed farms, 1,256 metric tons of assorted seeds were with a seed distribution output of 192 metric tons. On planting materials production, 297,476 pieces of sexually and asexually propagated plants were produced, 122,994 plants of which were distributed. About 145,564 hectares planted to rice, corn and other crops were likewise monitored and protected under the pest management and surveillance program. One notable accomplishment of the region on this aspect is the exportation by seed growers of the province of Camarines Sur of 1,292 cavans of IR 36 good seeds to Cambodia during the year in review.

The region's soil survey and classification activities covered 171,453 hectares surveyed and classified for various development projects; 171,654 hectares surveyed for the production of soil-based maps; 174,748 hectares placed under erosion control; 174,748 hectares surveyed for water impounding projects; and 99 fertilizer utilization studies conducted. Likewise, there were 24 verification trials and demonstrations conducted in support of the NFAC program and URARTIP/PAGASA projects; and 30 fertilizer demonstrations in support of the Libmanan/Cabusao Irrigation System. One important project undertaken and completed this year was the land resources capability classification jointly undertaken with the Bicol River Basin Development Program (BRBDP), which determined the appropriate farming system for the farming area of the municipalities of Caramoan and of the Partido district in Camarines Sur, and the municipalities between Tiwi and Legaspi City in Albay.

Special projects, among others, pursued by the region during the year, are as follows:

1. Unified Azolla Program (UAP) was fully implemented to reduce dependence on inorganic sources of nitrogen fertilizer. Nine propagation centers and 310 community nurseries were established and managed by 349 specially-trained technicians.

2. Intensified Rice Production Program (IRPP) was implemented late this year. With the delay in the release of loaning guidelines by the Central Bank to loaning institutions, only 54.1 hectares were planted so far out of the 7,500 hectares targeted.

3. Expanded Yellow Corn Production Program (EYCPP), (an extension of the Maisagana Program) aimed at meeting the demands of feedmillers for the livestock and poultry industry, has targeted ten municipalities with a combined area of 2,000 hectares, 718.5 hectares of which had been planted and the amount of only P2.92 million released so

far. Reluctance on the part of some financing institutions to participate due to low interest rate and late release of funds from the Central Bank have contributed to the low performance of the program.

4. Sweet Potato and other Rootcrops Production Program is being encouraged to complement the production of yellow corn for feeds and to meet the demand for agro-energy production, as well as to increase supply for human consumption. Some 585,000 cuttings were distributed to the different provinces in the region. Albay farmers who were affected by the recent Mayon Volcano eruption were the major recipients of these cuttings.

5. Ipil-ipil and Hanga Production. These indigenous trees have great potentials as alternative sources of fuel and energy. Hanga production in the region is presently supplying almost 45 per cent of the country's hanga requirements. A total of 36,380 marcotted trees was distributed during the year.

REGION VI (Western Visayas)

Reputed as the rice granary in the Visayas and Mindanao, palay production in Region VI totalled 1,065,285 metric tons during the period under review, representing an increase of 10.3 percent or 99,305 metric tons, over the region's 1983 palay production. The total is next only to Central Luzon's palay production of 1,225,185 metric tons, the highest of the country's 12 regions.

The harvested palay in Region VI covered an area of 438,670 hectares and registered an average yield per hectare of 2.43 metric tons. Adversely affecting the production and yield performance of the region were the two typhoons which had caused damages on the crop.

Production under Masagana 99 was 61% or 837.5 metric tons of the palay production, harvested from 226,919 hectares throughout the region. There were 327,683 farmers served in both programmed and unprogrammed areas.

Under the corn production program, 344 hectares in Iloilo and 1,116 hectares in Negros Occidental were targeted for corn planting. Corn farmers in Iloilo and Negros Occidental were estimated to be 99 and 396, respectively. Cornlands under the Maisagana totalled 17,159 hectares, 350% more than the 12,712 hectares planted to corn in 1983. The entire areas planted to corn, programmed and unprogrammed, were 69,660 hectares, producing a total of 31,721 metric tons of corn in 1984. Number of corn farmers served totalled 33,937.

Production in cassava and sweet potato, two rootcrops mainly produced in Region VI, totalled 25,075 and 24,039 metric tons, respectively. Cassava and sweet potato production covered 6,806 and 3,828 hectares, respectively.

Fish culture, a regionwide production program, was participated in by 263 farmers in an estimated area of 300 hectares. Production under this program were 21,243 cavans of palay; 39,248 kgs. of fish; and 363,000 pieces of fingerlings.

In livestock, artificial insemination has been widely practiced in cattle and swine breeding to accelerate production, expand the breeding base, and improve the genetic makeup of the stock. In 1984, some 15,261 head of cattle and swine were inseminated in the region by the Ministry's livestock technicians.

To support the ruminant livestock population of the region, 1,504 hectares were developed and planted to pasture and forage crops, and about 3,384 kilos of seeds were produced.

Under the disease prevention control, 1,290,873 head of livestock and poultry were vaccinated, and 700,668 head diagnosed and 555,805 head treated.

In line with the national thrust of reducing farmers dependence on the expensive inorganic fertilizer, the regional office targetted 21,252 hectares for azolla inoculation. Some 7,301 hectares were already inoculated, involving 4,181 farmers. To enhance azolla production, 229 technicians and 820 farmers were trained, while 7 provincial and 144 community nurseries were established for azolla production and propagation.

For vegetable production in programmed areas (Gulayan sa Kalusugan), about 4,025 hectares of vegetables were planted to different varieties, and the production totalled 6,433 metric tons harvested from an area of 2,219 hectares. About 28,511 metric tons of vegetables were also produced from 3,342 hectares of unprogrammed areas.

The region also expanded the areas planted to crops with export potentials, covering 365 hectares for mango; 546 hectares for coffee; 66 hectares for cacao; and 100 hectares for cashew.

For ipil-ipil, 1,100 hectares were being targetted for additional production, and 2,450 hectares have already been planted in 1984.

In cooperative development, the Ministry's regional effort resulted in the organization of 26 Samahang Nayons, 13 Kilusang Bayans, 2 Area Marketing Cooperatives, and 16 federations of Samahang Nayons, of which 13 were registered.

To revitalize the Samahang Nayons and Cooperatives, the Ministry's Cooperative Development Officers conducted 137 trainings attended by 1,658 participants from the Samahang Nayons, Area Marketing Cooperatives and Samahang Nayan Federations in the region.

Intensive effort was also directed in preventing malnutrition, as reflected in the 57,150 families being served under the malnutrition prevention program. This program aims to prevent malnutrition among infants from conception to 18 months old by educating mothers on the proper nutrition of their babies. It also emphasized the need for supplementary feeding of their infants upon reaching the fifth month. About 3,901 supplementary feeding centers, both home-based and center-based, were established in 1984.

To prepare out-of-school youths to become better farmers and be adequately equipped to earn their livelihood, 326 Anak-Bukid Clubs with 6,887 members were organized under the Ministry's Rural Youth Development Program. About 904 trainings and 2,090 classes were also conducted, complemented by 4,716 meetings, involving some 92,452 participants. About 10,857 home visits were also undertaken to improve leadership skills and farm management and practices.

Soils services activities of the region centered on research. During the year, 68 research studies on rice, corn, vegetables, and rootcrops were conducted by the regional office through its experimental stations at Guimaras, Visayas, La Granja, and the Agricultural Service Center.

Technology verification trials were also conducted in the fields, and cropping patterns were designed and tested for evaluation to identify and develop intensified multiple cropping.

To promote efficient utilization of soil and other land resources, 117 field trials were conducted and 446 samples were submitted for analysis under the fertilization utilization studies. About 1,448 soil samples were also submitted for analysis pursuant to Food Production and Agrarian Reform Program. Some 3,315 hectares were also surveyed and classified, and 216 soil samples were submitted for analysis under the Land Capability Classification Services.

Production and distribution of seeds and planting materials were similarly intensified. Around 778,478 plant materials produced from the experiment stations and from the municipal and provincial MAF nurseries were also distributed.

In crop protection, 626,571 hectares were surveyed and monitored, 291,983 of which were

surveyed for pest incidence, 188,919 hectares for plant diseases, and 155,669 hectares for weed infestation. Under the RP-German Crop Protection, 190 observation stations were established, with a total radiation area of 17,503 hectares.

REGION VII (Central Visayas)

For the year in review, rice production in Region VII both under Masagana 99 and rice sustaining areas registered 149,550 metric tons from an area of 104,130 hectares tilled by 87,345 farmers. This production is much higher than last year's output of 107,820 metric tons, or an increase of 38.7 per cent. Overall rice production under the Masagana 99 and unprogrammed areas would have fared well had it not been for two typhoons that visited the region in the months of September and November and the inadequacy of credit extended by lending institutions, as well as the high cost of farm inputs.

In corn production, a total of 213,090 metric tons was produced both under the Maisagana program and unprogrammed areas. Maisagana program is mostly concentrated in the provinces of Negros Oriental and Cebu, and is now on its third year of implementation. Like the rice program, corn production in this region also suffered the same impact of the two typhoons and the inadequacy of credit. MAF technicians served no less than 207,702 farmers, covering a total corn area of 482,070 hectares.

The region has continuously given priority to the promotion of livestock and poultry development, where most of its activities centered on animal dispersal and breeder production, artificial insemination, animal immunization and vaccination, animal feed control, animal quarantine and special project like the Bakahang Barangay. Under the animal dispersal and breeder production, 688 head of animals were dispersed/redispersed to deserving farmers so as to start their foundation stock and to upgrade their current stock. From this dispersal, 583 offsprings were produced. Artificial insemination services on 6,205 large animals mostly cattle and swine accounted for 17,393 offsprings.

No major outbreak or infestation of animal diseases was reported during the year, except in the number of deaths due to typhoons and bad weather conditions. The number of animals diagnosed, examined and vaccinated in connection with the eradication and control of hoof-and-mouth (HMD), hemsep, swine plague, hog cholera, avian pest and fowl cholera totalled 486,362. Animal feed control registered 1,353 feed samples collected and 384

feed establishments registered. On quarantine and inspection, 2,151,709 head of economic animals were examined and 11,205,770 were inspected either for slaughtering or shipment to other places. Significant strides under the supervised credit programs, particularly the Bakahang Barangay program, were also noted as 1,015 livestock raisers availed of the Barangay Financial loan with which to finance 1,628 cattle for fattening purposes amounting to P4,397,784.

Vegetable production in Central Visayas used to be on a backyard scale, but in recent years it has gone into commercial basis with the town of Valencia and Canlaon City in Negros Occidental, and the municipalities of Consolacion, Liloan, Campostela, Sibunga and Mantalogan and Dalaguete in the province of Cebu, as well as the municipalities of Pilar and Jagna in the province of Bohol, engaging in big time vegetable farming operation. For the year 1984, vegetable production in this region registered a total of 22,044 metric tons from 5,085 hectares. Some 19,482 farmers were served.



Rootcrop production was likewise encouraged not only for food but also as good substitute for feeds to livestock and poultry. In some areas in Bohol, the planting of cassava is being intensified to meet the requirements of the Philippine Starch, Inc., situated at Viela Suerte, Carmen, Bohol. Rootcrop production accounted for 176,372 metric tons for cassava, 13,313 metric tons for gabi, 58,034 metric tons for sweet potato, and 25,666 metric tons for ubi from a total hectareage of 35,785 tilled by 61,607 farmers.

Legume production, on the other hand, which consists mostly of peanut and mungo planted in some areas as intercrops and in rotation with corn, is now a lucrative venture not only because of the people's awareness on the role of legumes in nutrition, but also because peanut and mungo are now highly-priced commodities in Central Visayas.

At year's end, peanut and mungo production reached 3,456 and 3,137 metric tons, respectively, from 6,195 hectares cultivated. Some 13,497 farmers were served by MAF technicians.

In support of the Ministry's nutrition thrust, the region undertook intensive campaign on the prevention of malnutrition and rehabilitation of malnourished children, homeyard food production, and on income-generating projects. On this aspect, rural improvement clubs (RICs) and homemakers classes were organized to serve as channels in the dissemination of knowledge and skills to rural womenfolk. During the year, 676 RICs were organized with a total membership of 18,582. Some 769 homemakers classes were conducted and attended by 15,312 participants, 14,309 of which graduated. One project which the RICs pursued was the sponsoring of 460 RIC children centers with a total enrollment of 7,434 pre-school children of RIC members who were taught kindergarten lessons. With 473 insumix centers maintained, 12,003 infants were fed and 7,377 mother were extended services. Selective food production and planting of vegetables, as well as livestock and poultry raising, were given impetus. As a result, 244,999 plants consisting of kadios, papaya, malunggay and seguidillas (KPMS), 1,015,618 kilograms of fruits and vegetables, as well as 99,582 animals and fowls, were raised by 38,637 families under the assistance of MAF technicians.

About 380 Anak Bukid Clubs with 10,268 membership were organized and taught the necessary knowledge and skills in the management of specific livelihood projects. These out-of-school youths were able to produce 299.5 metric tons (MT) of beef, 122.8 MT of goat meat, 160 MT of peanut and mungo, and 1,015,618 kilograms of vegetables and fruits.

In cooperatives development, the region's thrusts were focused in the promotion/organization, registration, development/revitalization and supervision of Samahang Nayons (SNs) Agricultural Marketing Cooperatives (AMCs), Cooperative Rural Banks (CRBs), and Credit Unions. At year's end, accumulated SNs organized totalled 1,790 with a total membership of 86,217. Registered SNs reached 1,347, AMCs, CRBs and credit unions organized/registered accounted for 113, 2, 1, and 8, respectively. It also assisted in facilitating loans to 4 SNs under the Cooperative Development Loan Fund (CDLF) amounting to P200,000; to Dagawan (Bohol) SN under the SN-Special Project in the amount of P50,000; and to the AMC of Bohol, thru the Central Bank, under the Cooperative

Marketing Project (CMP) in the amount of P1.5 million.

The year also witnessed the region extending its full assistance in the development and organization of the Bayawan Fishermen's Marketing Cooperative, Inc., of Bayawan, Negros Oriental, and conducting and on-the-job training on inspection of all types of cooperatives. Highlighting its accomplishments, was when one of its pet projects — the Cooperative Rural Bank of Bohol, Inc. — was adjudged as the Most Outstanding Cooperative Rural Bank in the country for 1984.

Production of seeds and planting materials was similarly intensified by devoting 126 hectares of its seed farms and experiment stations to assorted crops. Seed production registered 179,716 kilograms of high-yielding rice, corn, peanut, mungo and assorted vegetables, 155,044 kilograms of which were distributed at the different rehabilitation centers and farmers' fields. Plant material production accounted for 212,512 pieces of sexually and asexually propagated plants produced with 164,285 pieces distributed to farmers and interested parties.

As part of the region's crop protection activities, the Surveillance and Early Warning System (SEWS) played an important role in protecting crops against destructive insects, pests and diseases. The RP-German crop protection project has continuously maintained 39 ecological units and 38 observation stations covering an aggregate area of 2,808 hectares. On pests and management, the project also covered a total of 163,854 hectares planted to rice, corn, vegetables, fruits, etc. The pesticide and residue laboratories were able to analyze for pesticide residues in 48 samples in plant tissues. So far, no alarming result has been found that would adversely affect the health of consumers.

The development of soil services focused on land capability classification, soil resources conservation and management, fertilization studies, updating fertility map and water impounding. To determine the capability of a certain area in support of food production, agrarian reform and agro-energy development, approximately 20,873 hectares were surveyed and classified, as well as 5,566 soil samples were analyzed; 4,561 hectares were placed under soil and erosion control; 71 fertilizer utilization trials were conducted; 20 soil bases were produced and 20 maps updated; and 4,561 hectares were surveyed for water impounding projects. Other activities dealt on soil fertility, which conducted investigations and verification trials and demonstrations in support to NFAC programs and projects.

The year 1984 likewise saw the region pursue special projects, among which are the following:

1. Rainfed Agriculture Development Outreach Site (RADOS). Situated in the town of Carmen, Bohol, the RADOS aims to identify a more profitable and socially acceptable cropping pattern for small-scale farmers in rainfed lowland and upland areas. Commodities included are cereals, feedgrains and legumes. During the year, RADOS tested three cropping patterns at research areas. In acidic soils, TPR-TPR-mung/watermelon, 4 fields were established and all fields were able to harvest its first and second crop except the third crop where mungbean was completely damaged by heavy rains in March, 1984. On the other hand, the WSR/TPR-TPR-mung/watermelon pattern under acidic soil were successfully established and harvested including the third crop, mungbean.

2. Agricultural Promotion Center — a joint venture between the Philippine Government and the Japanese International Cooperation Agency (JICA), the objective is to promote the agricultural development of Bohol province, covering such areas as research training and extension. Now on its first year of implementation and operation, the APC sites are located in DAO Tagbilaran City, BAC, Zamora, Pilar and BES, Gabi and Ubay. For the year in review, the APC activities were on the conduct of varietal and fertilizer trials and seed distribution. The center is now producing rice seeds for multiplication and ultimately for distribution to rice farmers. Rice varieties currently produced are Serigen 258 (Korean), Hawara Babu (Indonesian), IR-58, IR-62, Nikonbare, and Cainte.

3. Agricultural Extension Center — a component of the National Extension Project, will serve as the training venue for farmers, as well as for MAF Municipal personnel. There were 40 units actually allocated to Region VII and 23 of these units were constructed in 1983. For 1984, two units were completed making a total of 25 extension centers in the region. These newly completed agricultural centers are located in Sta. Fe, Cebu, and Calape, Bohol. Two additional centers are being constructed in Trinidad, Bohol, and Maria, Siquijor, and are expected to be completed by January, 1985.

REGION VIII (Eastern Visayas)

Calendar Year 1984 saw this region increased by 34.1 percent its rice production output in both the programmed and unprogrammed areas from 280,040 metric tons last year to 375,660 metric tons this year from a total hectareage of 198,480. Despite the long drought during the later part of 1983 and two successive typhoons that hit the re-

gion in September and November, this increase in rice production may be attributed to the additional area planted where farmers planted three croppings during the year. The massive rehabilitation program of the MAF initiated right after the calamities also added to such increase. In both programmed and rice-sustaining areas, 127,510 farmers were served by MAF technicians.

Insofar as loan releases to and repayments by farmers are concerned, a total of P107,117,218.95 was released by the Philippine National Bank, rural banks, and ACA/Land Bank, to finance Phase 1-22 under the Masagana 99 rice program, while the total amount repaid to the three financing institutions totalled P91,060,877.75, or a repayment rate of 82.53 per cent.

Corn production both under the Maisagana and the unprogrammed areas likewise increased by at least 14.8 percent with an overall production of 216,080 metric tons. There were 27,465 farmers served.

As regards the promotion of livestock, poultry and dairy, accomplishments were made in the areas of animal dispersal, breeder stock production, artificial insemination, pasture and forage development, beef/carabeef development program, dairy development, animal disease control and quarantine. Under the animal dispersal program, large animals were dispersed to deserving farmers, its main objectives being to start their foundation stock, as well as to upgrade their current stock. Stocks by species dispersed were 883 head of cattle, 162 carabaos, 529 goats and 87 hogs. The region's stock farms and propagation centers were able to produce a good supply of breeding stocks of 243 head of animals.

Supportive to the backyard breeding and animal dispersal is the artificial insemination services on 613 cattle, 117 carabaos and 5,779 swine. Results of this undertaking accounted for 81 for cattle, 44 for carabao, and 24,594 for swine. Pasture and forage development, on the other hand, was vigorously pursued with a total of 59 hectares of the regional farms/stations/centers developed and planted to leguminous and pasture grasses and ipil-ipil trees. It also provided assistance to farmers-cooperators engaged in grassland pasture improvement by supplying them planting materials on 45 hectares mostly under the coconut trees. These improved pasture areas were the principal sources of pasture feeds and seeds for distribution to interested and deserving farmers. Under the Baka-hang Barangay Program, some 511 head of cattle and 908 carabaos were produced by 1,063 farmers on a self-financed basis.

As regards dairy development, its dairy farms have continuously produced milk and its total output for the year in review was 8,629 liters. In its effort to serve more malnourished children under the milk feeding program, toned milk (fresh milk mixed with powdered milk) was served to no less than 16,425 school children in the neighboring barangays of the dairy farms. This number, however, fell short by almost 76 per cent from the expected 63,224 children targetted. This shortfall was attributed to the fact that the region did not receive enough powdered milk supply for the year.

There was no alarming outbreak of livestock and poultry diseases as sporadic cases were immediately checked. However, an aggregate of 399,273 immunizations and diagnostic treatment against common but highly infectious diseases was conducted on different economic animals, to wit; 76,643 for livestock and 322,630 for poultry. Animal feed control and laboratory services registered 8,890 feed samples collected and analyzed, 145 animal autopsies and 841 animals deflucked. Quarantine inspection services were also rendered to 405 inter-island vessels and 102 foreign vessels upon docking at its regional ports. Some 59,523 head of economic farm animals, including 16,487 kilograms of meat, were likewise examined and issued permits for transport to or outside the region.

Rice-fish culture was given impetus with a total of 111 farmer/cooperators engaged in this project to augment family income aside from providing them with a source of protein. From an area of 56.7 hectares planted to palay and stocked mostly of tilapia, 220 metric tons of palay and 5,623 kilograms of fish were produced.

In vegetable production, 4,352 metric tons were produced by 5,719 farmers with 938 metric tons from fruit vegetables (tomato, squash, upo, bean family and other viny vegetables). This output was attained from 1,686 hectares. Leafy vegetable production this year was comparatively higher than last year's; while fruit vegetable production was moderately lower than last year's due to a series of typhoons which visited the region. Under root-crop production, where sweet potato, cassava and gabi are extensively raised in the region, a total hectareage of 59,883 was planted with a total turnover production of 239,648 metric tons, distributed as follows: 117,431 metric tons for sweet potato; 95,129 metric tons for cassava, and 23,088 metric tons for gabi. Some 91,344 farmers were served by field technicians.

The production of leguminous plants, specifically mungo, was reduced in terms of farmers served, hectareage and production on account of farmers'

preference to corn over mungo as plant commodity. However, in peanut production, targets on production and area were reduced in anticipation of the high cost of investment on seed input as compared with other crops. At any rate, mungo and peanut production still accounted for 609 metric tons and 1,952 metric tons, respectively, from a total area of 2,838 hectares tilled by 8,279 farmers.

Along with other priority thrusts of the Ministry, fruit trees production especially avocado, caimito, jackfruit, papaya, pilinut and citrus, was encouraged. Of the 120,429 fruit trees planted, production breakdown is as follows: avocado - 835 metric tons; caimito - 609 metric tons; jackfruit - 4,037.5 metric tons; papaya - 940 metric tons; pilinut - 683 metric tons; and citrus (from 440 hectares planted) - 1,542 metric tons. Other fruit trees like chico, guayabano, and lanzones accounted for 327 metric tons from 253 hectares. Some 323 pineapple plants as intercrop under the multi-storey project registered a total of 1,469 metric tons; and banana production likewise, accounted for 210,501 metric tons from an aggregate area of 42,647 hectares produced by 93,042 farmers.

In support of the plantation crops development program of the Ministry, existing coconut plantations with an area of no less than 677 hectares were planted to coffee and cacao only this year. From the old plantation, however, 449.5 metric tons of coffee and 212 metric tons of cacao were produced.



Intensive campaigns on nutrition education, homeyard food production and income-generating projects were undertaken. Under the malnutrition program, prevention of malnutrition among the vulnerable group of 0-18 month old infants was undertaken by means of adequate supplementary food and breast feeding. On this regard, 15,975 infants were fed and served and weighed regularly to follow-up their weight improvement. Its rural improvement club centers (RICC) were likewise able to feed and serve 15,271 pre-schoolers and their mothers. Selective backyard production, such as vegetable gardening, livestock and poultry raising, were undertaken by Anak Bukid members. Some 557 Anak Bukid members were involved in the production of mungo by planting 88.5 hectares producing 45,617 kilograms; while another 529 AB members ventured in peanut production with an output of 60,852 kilograms. Likewise, 91 AB members raised 93 head of cattle/carabao for fattening purposes or a total of 31,521 kilograms. In cattle/carabao breeding, 177 AB members raised 189 head for breeding, producing 12 calves during the year.

In cooperatives development, the primary concerns were the promotion/organization/registration/revitalization of Samahang Nayons (SNs) and Kilusang Bayans (KBs), identification of SNs for Action Program-KKK (SNAP-KKK), auditing of SNs and cooperatives. For the year in review, 32 SNs were organized, 6 of which were registered with a total membership of 1,349. Of the 204 dormant SNs targeted for revitalization during the year, only 147 SNs were revitalized with 4,308 members. Kilusang Bayans (KBs) organized and registered totalled 11 and 6 respectively, with 2,820 members. In its entirety, 648 SNs and 104 KBs were extended technical assistance in the form of meetings, audits, mediation in the deliberation and solution of problems by members. There were 6 SNs extended loans by the Bureau of Cooperatives Development under the SNAP-KKK project. Target-wise, this represents an accomplishment of only 13 per cent, which is comparatively lower than last year's. The decrease is attributed to the insufficiency of funds from each loan release involving an average amount of P50,000.00.

Along seed production, through its stations and seed farm — the Romualdez Experiment Station (RES), Abuyog Experiment Station (AES) and the Gandara Seed Farm (GSF), were able to produce 36,708 kilograms of palay seeds. Only the RES and GSF were involved in the production of corn seeds, turning an output of 4,910 kilograms and 5,000 kilograms, respectively. Legume and vegetable

seeds production being undertaken at the RES, AES and GSF, including the Salcedo Seed Farm, also registered a total of 7,905 kilograms and 473 kilograms, respectively. Vegetable seed output during the year was considered low due to abnormal weather condition. In plant material production, 200,582 pieces of sexually and asexually propagated plants were produced. However, there was no record on the number of plant materials.

With respect to crop protection, the surveillance and early warning system (SEWS) of the RP-German Protection Projects in the region registered a total of 25,538 hectares covered and surveyed. Crop losses were significantly reduced due to the control of various pest infestation. Along this line, 58,126 hectares were placed under control.

Plant quarantine in the region was intensified thru vigilant implementation of quarantine rules and regulations. As of December 31, 1984, 2,508 interisland vessels were boarded and inspected, and 2,547 metric tons of plant products and 38,973 pieces of plant materials were subjected to thorough inspection.

Supportive to the food production, agrarian reform and agro-energy development is the region's soil extension services. At year's end, 65,844 hectares were classified and surveyed and 132 soil samples analyzed under the land capability classification; 10 provincial and municipal soil fertility maps updated; 8 soil base maps produced; and 5,460 hectares placed under erosion control. Other activities dealt on soil testing/analysis where its soils laboratory analyzed 372 samples for rice, 392 for corn, 141 for legumes, 104 for vegetables, 63 for fruit trees, 328 for coconut and 442 for other crops, covering an aggregate area of 5,337 hectares. About 1,146 farmers were benefited.

REGION IX (Western Mindanao)

For the year in review, the total rice production for both the Masagana 99 and rice-sustaining areas accounted for 318,165 metric tons from a total hectareage of 136,730. Compared to last year's production, this year's output increased by 39.4 percent. Service was extended to 132,136 farmers.

Corn production, on the other hand, remarkably produced a total of 165,665 metric tons from both the Maisagana corn program and the unfinanced areas, or an increase of 3 percent over last year's production of 160,828 metric tons. Some 137,387 farmers were assisted by field technicians.

Though implemented only in Zamboanga del Sur, rice-fish culture has gained headway

among smallholder farmers. With 10 hectares planted to rice and stocked with tilapia fingerlings by 250 farmers, both rice and fish production registered 40,000 kilograms and 5,000 kilograms, respectively.

The livestock and poultry development program was vigorously pursued, not only to support the MAF's objective to increase the supply of meat and poultry products but also to upgrade the existing native cattle, goats and swine in the region. Supportive to this goal are the different activities like the establishment and development of stock farms and breeding centers, expansion of animal dispersal projects, immunization services and other services related to livestock and poultry production. During the year, its 16 breeding stations/stock farms produced 19,471 head of animals, 17,882 of which were swine. Animals dispersed accounted for 805 head of animals. Under artificial insemination services, 2,820 swine were inseminated, and from this operation, 15,044 offsprings were produced. The number of other animals produced like cattle, carabao, goat and poultry indicated only 47 to 63 per cent accomplishment due to the fact that the Lungkiaban Animal Breeding Station at Talipao, Sulu is not yet operational to augment the production of animals under this project. On the whole, the livestock/poultry development program for the region reported a total of 29,477 cattle breeders and 25,587 cattle fatteners raised by 14,208 farmers; 2,096,768 chickens with an egg production of 13,961,850 pieces raised by 30,828 poultry raisers; 142,955 swine breeders and 308,727 swine fatteners raised by 26,652 farmers. 136,487 goats raised by 15,338 farmers; and 75,509 ducks raised by 8,972 farmers. Animals slaughtered reached 21,013 head of cattle with a meat production of about 2,284 metric tons; 232,282 hogs with a meat production of more or less 7,964 metric tons; 38,892 goats with a total of no less than 762 metric tons; and 30,571 ducks with a meat production of 102 metric tons.

Insofar as pasture and forage development and seed distribution are concerned, area developed reached 158 hectares with a seed distribution of 3,775 kilograms.

Activities on eradication and control of liver-flukes recorded 5,262 cattle and 5,513 carabaos diagnosed and treated. Although there was no serious animal diseases outbreak during the year, some cattle and carabaos diagnosed were found to be infected with internal parasites, but were subsequently treated. Animals vaccinated for various diseases totalled 181,760; animals diagnosed numbered 81,270; and animals treated registered

90,119. Deeply involved in the regulation and inspection of various animals and animal products coming in and out of the region is its regional veterinary quarantine services. On this regard, 277,391 assorted livestock and poultry were registered as incoming majority of which were one-day old chicks totalling no less than 172,480 birds. On the other hand, about 9,026 outgoing livestock and 18,515 native poultry/chicken were inspected. No less than 5,701 domestic vessels/aircraft and 294 foreign vessels/aircraft were boarded and inspected to ensure that livestock and animal products were free from any harmful diseases that would contaminate animals, as well as human beings in the region.

Vegetable production was vigorously pursued during the year. Under the Gulayan Sa Kalusugan program (GSK), Zamboanga City alone reported a production of 5,677 metric tons of assorted vegetables from an area of 1,498 hectares planted by 3,802 farmers. This program is newly implemented in Zamboanga del Sur in 3 municipalities and one city which served as pilot areas for the project. With 391.62 hectares planted, a total of 562 metric tons was registered. Some 1,548 farmers were served by technicians. The non-financed program, as well as the backyard vegetable production likewise recorded an output of 157,887 metric tons of assorted vegetables from a hectarage of 8,645 tilled by 23,052 farmers.

In rootcrops production, cassava still tops in terms of production, accounting for 94,507 metric tons from 20,145 hectares involving 18,119 farmers. Other rootcrops like sweet potato, gabi, tugui, and ubi registered a total production of 69,151 metric tons planted to 10,774 hectares. There were about 9,000 farmers engaged in this endeavor.

As regards legume production, such as mungo and peanuts, a total of 3,642 hectares was planted. From this hectarage, an overall production of 1,464.34 metric tons was obtained with 5,651 farmers assisted. Fruit production likewise registered an overall total of 480,864 metric tons from 27,360 hectares planted to bananas and citrus, 480,764 metric tons of which came from banana. About 24,416 farmers were served.

Plantation crops development, which includes both food and non-food (cash) crops, such as cacao, coffee, rubber and abaca, was encouraged. In the expansion of these crops, the region underwent into intercropping, multi-storey and multiple cropping projects, primarily to help augment the income of farmers by utilizing unproductive areas under coconut plantations. The breakdown of areas (hectares) and its respective production

planted to priority crops, are as follows: coffee - 11,229 hectares - 12,000.5 metric tons; cacao - 25,408 hectares - 1,238 metric tons; and rubber - 23,933 hectares - 24,856 metric tons.

In support of the nutrition thrust of the Ministry of Agriculture and Food, the region undertook extensive educational campaign to improve the knowledge, attitudes and practices of family nutrition; prevention of malnutrition and rehabilitation of malnourished children particularly among infants; and increased participation of rural families in homeyard food production and income-generating projects. As an educational project to improve the knowledge, attitudes and practices of mothers in infant nutrition, emphases were laid on breastfeeding, early supplementary feeding and the maintenance of progressive weight gain of infants. It also integrated the mental and psycho-social aspects of early childhood development. In this aspect, the home management technicians assigned in the different areas monitored weights by regularly weighing infants between ages of 0-18 months old. There were 334 Rural Improvement Clubs and 79 RIC-Children Centers, (RIC-CC) organized during the year with 9,585 and 1,811 members, respectively. Members of the RICs and homemakers clubs were also involved in homeyard food production like raising vegetables, fruits, poultry and livestock. As a result, these projects produced 251 metric tons of vegetables; 13,722 chickens; 10,807 swine; 87.2 metric tons of meat and meat products processed; and 70.9 metric tons of assorted fruits and vegetables processed. Income-generating projects like mat weaving and clothing, and food trades recorded a production of 1,319 pieces, 1,082 pieces and 2,210 kilograms, respectively. Members of Anak Bukid Clubs likewise engaged in small-scale livestock and poultry production activities, such as beef/cattle fattening/breeding, poultry raising, goat raising, swine raising; and food processing, were able to produce 40,788 kilograms out of the 206 head of cattle raised; 21,797 kilograms from 19,706 chickens; 44,757 kilograms from 1,392 goats; 74 kilograms of pork, and 2,934 of assorted food processed.

In seed and plant materials production, the region's two experiment stations, La Paz Experiment Station and Ipil Experiment Station and Seed Farm, continue to produce seeds and planting materials. Seeds produced at Ipil Experiment Station totalled 4,612 kilograms, some of which were distributed to interested farmers for backyard gardening. The La Paz Experiment Station, on the other hand, produced 129,349 of sexually and asexually assorted planting materials, 2,405 pieces of which were distributed. Seed produc-

tion in this experiment station was considered very low for this year, since vegetable seedlings were all destroyed because of continuous heavy rains that hit the city during the middle part of the year. As regards plant quarantine, 13,878 inspection of various kinds of goods and plant materials were made.

As part of the region's crop protection, disease outbreak report recorded 50.6 hectares affected, while pest infestation indicated 321.95 hectares affected.

Various pest infestations were significantly reduced because of the effective implementation of the Surveillance and Early Warning System (SEWS).

Under soils survey and classification, 160,800 hectares were covered, surpassing the conservative regional target of 13,618 hectares. Its testing laboratory was able to chemically analyze 2,143 soils samples, serving 752 farmers; collected and analyzed 10,309 soils samples; and produced 826 packets of inoculants. Water Impounding Project (WIP) was vigorously pursued to minimize floods, control erosion, and develop areas into productive farm lands through proper soil and water management. On this regard, 9 sites potential to agricultural development were indicated. Data collated would serve as basis of evaluating these sites for possible construction of small water impounding projects.

Other special projects/support programs, among others, pursued by the region during the year in review were:

1. The Regional Integrated Agricultural Research System (RIARS), a special MAF Program for the integrated agricultural research on crops, livestock, soils and socio-economics at the regional level. For Crop Year 1984-85 research studies are still undergoing with 15 cropping pattern trials being conducted in certain areas to wit: 5 trials for lowland, 2 for irrigated, 6 for upland and 2 for hilly areas. These research-managed trials for Crop Year 1984-85 are being conducted in collaboration with the existing research agencies like RCPC in Molave, Zamboanga del Sur, on insect control technology, Soils Services on Azolla studies as organic fertilizer, the Fiber Development Authority (FIDA), Philippine Coconut Authority (PCA), and Bureau of Animal Industry (BAI) on coco-based farming system, and the International Rice Research Institute (IRRI) on upland crop variety. It is expected that the promising results of these research studies will evolve substantial improvements over the farmers' present farming practices.



2. CAMARCOS — an acronym for cacao, mango, rubber, and coffee, was launched to help augment income of coconut farmers as a result of the sudden drop in coconut prices some years back. This project was initiated and given support by the Provincial Government of Zamboanga del Norte. The scheme adopted in this program is the intercropping of these commodities under coconut areas. For CY 1984, 383 hectares were planted to cacao, 364 hectares to coffee, 151 hectares to mango, and 4,368 hectares to rubber. This output registered an overshoot of accomplishment against targets for the year. Farmers throughout the province were able to avail of planting materials propagated and distributed under the program by the MAF.

3. AZOLLA production — an effective alternative to nitrogen fertilizers while attaining optimum productivity and increasing income level, the project is carried out in 3 major provinces of Zamboanga del Sur, Zamboanga del Norte and Zamboanga City, each having one provincial nursery. Total land area of these provincial nurseries is 2,100 square meters with a total production of 21,700 kilograms per year. There are 92 nurseries at the municipal level covering a total area of 20,763 sq. m., registering a total output of 191,140 kilograms of inoculum per year to serve the farmers in their respective areas. To date, 1,951 barangay nurseries have been established with an area of 497,642.7 sq. m., producing 234,546 kilograms of azolla inoculum. These nurseries in the region are now serving a total rice land area of 15,333.5 hectares with 836 farmer-cooperators benefiting from the program.

4. ASEAN Goat and Sheep Center was conceived to help improve the living standard of smallholder farmers, as well as to conduct research works on goats and sheeps to generate technology for farmers' adoption and subsequent improvement of the sheep and goat industry in Zambo-

anga del Sur, in particular, and the country, in general. The Center has 2 goat sheds with a capacity of 150 goats each. Complementary to the project is a tilapia fishpond, utilizing goat manure as fertilizer for the pond. About 70 hectares were also planted to different kinds of pasture grasses.

REGION X (Northern Mindanao)

In Calendar Year 1984, rice production under Masagana 99 program and other rice-sustaining areas in Region X registered an overall production of 235,255 metric tons from an area of 101,200 hectares. This production is lower than last year's 277,960 metric tons or a decrease of 15.4 per cent. Number of farmers assisted totalled 93,790.

In corn production, 30,612 corn farmers both under the Masagana program and extension areas cultivating 203,420 hectares produced a total yield of 177,960 metric tons. Compared to last year's output of 183,550 metric tons, this year's production is lower by 3 per cent. Such decrease is traceable to slow bank releases, as well as to natural calamities that visited the region during the year.

In the field of livestock and poultry development, the region's activities were in livestock and poultry dispersal and breeder production, dairy development, artificial insemination, pasture and forage development, beef/carabeef development, animal immunization and disease control, livestock market development, and veterinary quarantine and inspection. Despite limited resources, the region's stock farms in Malaybalay, Bukidnon, and in Butuan City, as well as the self-reliance project at Cagayan de Oro City, were able to disperse 51 head of cattle, 21 head of swine, 20 head of goats, 12 ducks, 2 rabbits and 179 chickens; while its stock farms and propagation centers reported the birth of 56 cross-bred cattle, 29 head of swine, 263 chickens, 19 ducks, 20 goats and 5 rabbits. Production of breeder stock, especially on hogs and poultry, was minimized due to increase on the prices of feeds.

Dairy development in the region was vigorously pursued. During the first three quarters, milk processing was done at Kalingasan Processing Plant at Villanueva, Misamis Oriental, where 2,546 liters of milk collected from four dairy cooperators having six dairy animals, were collected and sold. With the additional milk collected from the MAF-Philippine Dairy Corporation (PDC) backyard cooperators of Northern Bukidnon (Dalirig and Lanukan, Manolo Fortich), processing of milk was transferred to Cagayan de Oro Regional Office to facilitate milk processing and distribution to individual

consumers, as well as government employees. At year's end, a total of 6,889 liters of milk was processed and sold from 59 MAF-PDC backyard dairy cooperators having 100 dairy animals of Holstein-Schival cross. Moreover, an enterprising individual has established and developed a commercial type dairy project with the assistance of MAF technical men, processing no less than 5,246 liters of milk from 25 Holstein crosses and selling them to the different city groceries.

In artificial insemination, its seven artificial breeding centers inseminated a total of 3,736 gilts/sows, producing 19,765 piglets. Insemination of large animals was focused only on dairy animal production, a joint venture with the Philippine Dairy Corporation. There were only 736 head of heifers/cows inseminated using dairy semen during the year. The accomplishment is considered par below the performance compared to last year's. This is attributed to lack of semen supply and equipment, logistic support and the lack of receptivity of farmers regarding the upgrading program.

Aware of the lessons taught to livestock farmers/producers brought about by the long dry spell that wrought heavy losses on farm animals, livestock farmers are now conscious about the health and nutrition of their animals. During the year, these livestock/dairy cooperators developed about 32 hectares of improved grassland pasture. These improved and developed areas were the principal sources of forage and grasses with which to feed their livestock. Its regional seed bank likewise was able to distribute 3,500 ipil-ipil seedlings to interested recipients.

As regards beef/carabeef development program, some of the highlights of accomplishments were: 1) conducted 19 livestock and poultry seminars attended by 480 livestock farmers in 3 provinces; 2) assisted and served 38,315 farmers/livestock producers/prospective producers in livestock and poultry management practices; 3) assisted 157 backyard livestock raisers obtain loans amounting to P1,390,172 for 441 head of cattle under the Bakahang Barangay fattening scheme; and 4) five active rural banks participated in the beef-carabeef development program.

There was no outbreak of communicable animal diseases during the year. Although severely plagued by irregular supply of vaccines, especially on hemorrhagic septicemia and hog cholera, its livestock inspectors were able to vaccinate 2,052 head of cattle, 2,857 head of carabaos and 1,203 goats, sheep and horses against homesep. Hog cholera and swine plague vaccinations accounted for 10,353 head of swine immunized, while 202,672 fowls were likewise immunized. Campaign against liver-

fluke was intensified in the provinces of Agusan del Norte, Agusan del Sur, Misamis Occidental and parts of Misamis Oriental and Southern Bukidnon registering a total of 3,049 head of cattle and carabaos deflucked.

As in previous years, the region's two livestock markets situated at Cogon, El Salvador (Misamis Oriental) and Valencia, Bukidnon, have continuously maximized the profits of 16,614 livestock farmers. At year's end, some 11,911 head of cattle, carabaos, and horses were sold valued at no less than P24,618,328.

On animal quarantine and inspection, major quarantine stations established were maintained in strategic points of entry to regulate and monitor the movement of livestock and poultry, as well as animal products/by-products. Because of its rigidity in the implementation of quarantine rules and regulations vis-a-vis the livestock industry from possible hoof-and-mouth disease (HMD), Region X has maintained its reputation of being the only region free from HMD disease. For the year in review, some 14,363 head of economic farm animals and 706,121 poultry and other animal effects were inspected coming in and going out of the region; while 15,647,260 pieces of table eggs and duck's eggs (balut) were examined and inspected.

Vegetable production in Region X is covered by the Gulayan sa Kalusugan Program (GSK). For the Year 1984, the vegetables raised and their corresponding hectareage, under cultivation and production are as follows: cabbage, pechay, etc., - 305 hectares - 2,131 m.t.; eggplant - 504 hectares - 1,782 m.t.; tomato - 1,207 hectares - 19,882 m.t.; and garlic & onion - 495 hectares - 846 m.t.; mungo - 1,602 hectares - 1,121 m.t.; soybean - 1,400 hectares - 1,595 m.t.; peanut - 1,079 hectares - 1,157 m.t.; and ginger - 447 hectares - 2,029 m.t.; Rootcrop production like cassava, sweet potato, gabi, including ubi and tugui, all registered an overall production of 227,649 metric tons from a total hectareage of 55,986. Some 26,162 farmers were involved and served by technicians in this endeavor. On the other hand, fruit production, with 56,879 hectares devoted to banana and 17,654 hectares to pineapple, its production turned out 341,443 metric tons and 1,530,756 metric tons, respectively. Citrus (calamansi, mandarin, orange and pomelo) also recorded a production of 5,757 metric tons from 698 hectares; and watermelon tallied 3,291 metric tons from 98 hectares. Some 57,455 fruit farmers were served.

Commercial and/or plantation crops like coffee, cacao, coconut, sugar, rubber and abaca grown both for bringing in dollars to the country and for

increasing farm income also provide raw materials for domestic agro-based processing plants. Total production and hectareage of each of these crops are as follows: coffee, 25,030 metric tons from 27,235 hectares; cacao, 986.2 metric tons from 1,569.3 hectares; coconut, 435,519 metric tons from 122,244 hectares; sugar, 345,000 metric tons from 30,000 hectares; abaca, 4,057 metric tons from 9,000 hectares; rubber, 7,279 metric tons from 8,612 hectares; and tobacco, 935.7 metric tons from 3,199 hectares. Approximately 91,500 farmers were served by MAF technicians in this endeavor.

In support of the nutrition thrust of the Ministry of Agriculture, the region undertook intensive campaign on nutrition education, activities of which were geared on supplementary feeding among infants and pre-schoolers, prevention of malnutrition and rehabilitation of malnourished children, homeyard food production and income-generating projects. As a result of the intensive campaign on the prevention of malnutrition among the vulnerable group of 0-18 month old infants, about 26,220 children-enrolees benefited from this program. Training sessions and meetings were conducted for homemakers and rural improvement clubs with an attendance of no less than 30,326 womenfolk. Also involved in productive undertakings were Anak Bukid Club and farmer/borrowers, and no less than 33,433 members ventured in cattle production, poultry and swine production, goat production, duck raising, and income-generating projects like clothing, food processing, etc. These projects turned out 109,170 head of fattened cattle, 574,854 chickens, 341,227 swine, 35,329 goats, 34,598 ducks, 4,191 pieces of clothing, 4,099 pieces of assorted handicrafts and 111 kilograms of food processed.

In implementing the cooperatives program, the region has continuously provided regular supervision, technical and financial support to cooperative organizations and institutions under its coverage. To promote organizational viability, 16,048 cooperatives were assisted and 935 implementation trainings on cooperativism were conducted during the year. To date, there are 565 Samahang Nayons fully organized with a total membership of 27,178.

Production and distribution of seeds and planting materials were similarly intensified to supply the seed requirements of the food program. Along this line, although no record on seed production was submitted by the region, seed distribution was pegged at 7,840 metric tons. Plant materials production, on the other hand, totalled 318,635

pieces of sexually and asexually propagated plants. There was, however, no record of plant materials distributed to farmer/clienteles.

Insofar as crop protection is concerned, main activities were geared at preventing and controlling plant pest and disease occurrences. Its 230 observation stations under the RP-German Crop Protection program covered 109,836 hectares. Likewise, plant quarantine was intensified thru implementation of quarantine rules and regulations. Stations and centers in the region's ports and seaports of entry were strengthened to facilitate the eradication/identification of plant pests and diseases. As of December 31, 1984, 2,251 permits were issued for plants and plant products brought out from the region.

Supportive to the food production, agrarian reform and agro-energy development is the region's soil extension services. Its land capability and suitability activities covered 10,075.51 and 7,615.36 hectares surveyed, respectively, 9,267.5 hectares were surveyed for the production of soilbased maps; 1,361.3 hectares were placed under soil erosion control; 24 fertilization studies conducted; and 3,132 soil samples analyzed. Other activities dealt on soil fertility, which conducted 76 investigations and verification trials for rice, corn and other crops on farmers field in support of the NFAC projects and URARTIP/PAG-ASA projects.

Special projects, among others, pursued by the region during the year, are as follows.

1. Azolla production — 148 azolla community nurseries were established, serving approximately 2,171 farmers in 1984. The distribution covered 186 barangays and 58 municipalities/cities. The provincial propagation centers distributed a total of 6,549 kilograms of inoculum in an area covering 16,668 square meters.
2. Multi-storey cropping — 30,531 cacao seeds were distributed to Agusan del Norte and Agusan del Sur, Camiguin, Misamis Occidental and Misamis Oriental. These seeds were planted in a 29-hectare lot and distributed to 25,723 farmers.
3. Rehabilitation Program — To rehabilitate the damage done by typhoon "Nitang" in the provinces of Camiguin and Surigao del Norte, the following stocks were distributed as of December, 1984: 1,123 cavans of palay seeds; 2,625,500 pieces of camote cuttings; 24,069 packets of vegetables seeds; 30,930 cassava cuttings; 900 pieces of coffee seedlings; 2,800 fruit trees seedlings; and 800 ornamental seedlings.

REGION XI (Southern Mindanao)

For the year in review, rice production for this region registered 509,235 metric tons in both Masagana 99 and rice-sustaining areas harvested from a total hectareage of 169,890. This production is slightly lower by 1.2 per cent compared to last year's output of 515,430 metric tons. This decrease may be attributed to the reduced application of fertilizer brought about by the multiple increase in the cost of fertilizer and other farm inputs, occurrence of pests and diseases, some farmers shifting from farming to gold panning, while others abandoned their farms because of the erratic peace and order condition. Number of farmers served and assisted by MAF technicians totalled 62,178.

Corn production both under the programmed (Masagana) and unprogrammed areas rose to 1,058,200 metric tons, or an increase of 5.8 per cent over the previous year's output of 999,640 metric tons from a total area of 747,760 hectares tilled by 127,761 farmers.

In the field of livestock and poultry development, activities were centered in the areas of animal dispersal, forage and pasture development, artificial insemination, beef/carabeef development program, immunization and treatment of large and small animals, and veterinary quarantine, among others. In livestock dispersal, animal dispersal by specie accounted for 107 head of cattle, 221 goats; and 175 swine. To upgrade the quality of cattle and swine stocks and increase meat production, 4,993 head of cattle and swine were artificially inseminated. From this operation, a total of 28,667 offsprings was produced. Under the beef/carabeef development program, 1,099 livestock raisers availed of the Barangay Financing Loan with which to finance 2,390 head of cattle, 1,183 swine and 1,460 goats for fattening and breeding purposes.

With respect to immunization, prevention and control of animal diseases, some 117,585 large animals were vaccinated against hoof-and-mouth disease (HMD), and hemorrhagic septicemia (HEMSEP); 288,729 swine against hog cholera and swine plaque; 290,703 fowls against avian pest, fowl cholera and roup; and 1,194 assorted animals against rabies. It also diagnosed and treated 73 large animals for liverfluke and various diseases, as well as castrated 2,475 head of cattle and carabao; 35,647 swine; 2,133 goats/sheeps; and 15 pet animals. Veterinary quarantine inspection services, on the other hand, registered no less than 1,074 boardings/inspections on foreign and domestic vessels and other transports and given clearances.

About 1,730,456 of assorted animals and 2,922,434 pieces of animal product/by-products, such as hides, eggs, meat, etc., were examined for intra-and-inter-provincial and/or Metro Manila shipment.

As a component of livestock development, the region also directed its efforts towards the development of forage and pastures. Other than the region's stations/centers where 12 hectares were planted to legumes, grasses and ipil-ipil trees, some 730 livestock raisers/cooperators assisted by MAF technicians developed and improved 9,950 hectares which were planted to ipi-ipil trees and grasses.

The region also engaged in vegetable production. As of December 31, 1984, some 11,895 hectares were planted to assorted vegetables including soybeans with a recorded production of 15,261 metric tons and 17,890 farmers served in this endeavor. Accordingly, rootcrop production was not a profitable venture for unknown reasons, except for some claims that these crops are produced mainly for home consumption and that excess products, if any, have no good market. At any rate, a total of 5,135 hectares planted to rootcrops still produced 17,555 metric tons from a target area of 6,020 hectares. Last year's production was 70,941 metric tons from an area of 8,023 hectares planted. Number of farmers served during the year in review totalled 9,386, compared to last year's 13,871 farmers served.

In legume production (mungo, peanut, beans), a total of 3,988 metric tons was obtained from 3,877 hectares cultivated by 5,558 farmers. Fruit production, on the other hand, chalked up 17,266 metric tons from 2,452 hectares. There were 2,675 farmers served by technicians.

Although the region has continuously intensified its efforts in the development of plantation crops, there was a noted decline in the production of some plantation crops due to the 1982-83 long drought. Some of the plantations have not fully recovered from the effects of the drought. Below is a comparative breakdown of areas (hectares) planted to crops and its corresponding production, covering Calendar Years 1983 and 1984:

CROP	1983		1984	
	Area (has.) Culti- vated	Pro- duction (M.T.)	Area (has.) Cul- tivated	Pro- duction (M.T.)
1. Coffee	20,615	29,394	18,257	10,873
2. Cacao	5,842	5,565	5,539	5,893
3. Rubber	2,926	8,220	1,891	9,641
4. Banana (Saba)	5,129	80,039	15,660	69,736

In the field of nutrition, intensive campaigns on nutrition education, prevention of malnutrition and rehabilitation of malnourished children, home-yard gardening and income-generating projects were undertaken. Some 38,447 pregnant and lactating mothers, as well as 26,313 infants and pre-schoolers, benefited from various malnutrition projects. With 295 Rural Improvement Club Children Centers (RIC-CC) established and made operational, 13,660 infants were given insumix. There were 26,968 training sessions, classes, meetings and home visits conducted for homemakers and RIC members with an attendance of 27,839 women-folk. Through the International Fund for Agricultural Development (IFAD), 1,290 mothers of 2nd and 3rd degree malnourished pre-schoolers were taught skills in child care, food production and preparation of food menus for their children.

To improve the nutritional status of the rural folk and to augment their income, farm families engaged themselves in undertaking income-generating projects like raising vegetables and fruits, food processing, poultry and swine raising. As a result, total production from these projects accounted for 86,210 plants under the kadyos, papaya, malunggay, seguidillas (KPMS) project; 6,221 metric tons of assorted vegetables and fruits; 346.5 kilograms of processed foods; 236,854 fowls; and 16,650 head of swine. Aside from the 7,942 families involved in these activities, 150 RIC members were also trained in ornamental horticulture and herbal medicine.

Some 987 Anak Bukid Club members also engaged in cattle fattening, goat raising, poultry and swine raising, and other income-generating projects. On these aspects, 269 cattle and 2,816 goats were fattened under the supervised credit program. Poultry and swine accounted for 16,209 birds and 1,125 swine raised by 1,685 AB members; and 3,697 pieces of clothings and handicrafts, as well as food processed, were produced by 977 AB members. On the other hand, KASAKA, an experimental credit program for Out-of-School Youth (OSY) piloted in Davao del Sur, benefited 65 OSYs in goat raising and another 53 OSYs in cattle fattening program. A total of P269,000 was released for both projects with a repayment rate of 26 per cent (P69,665.80) after one year. The loans mature in 1985.

Along cooperatives development, the region's regulatory unit registered 197 coops, 130 of which are active while the rest are dormant or inactive. The total combined resources of the 130 coops are as follows:

Membership	—	P 56,000.00
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Total assets	—	97,346.00
Total paid-up	—	53,765,414.00
Total net Savings	—	5,416,905.00
Total Average paid-ups	—	P 413,580.00

Seventeen of these active coops have attained millionaire's status with combined assets of P7,795,864.00 and a combined paid-up capital of P51,643,736.00 as of December 1984, or an average of P3,987,992.00 and P3,037,866.82, respectively. The King Development Cooperative, Inc. (KDCI), owned and managed by 1,400 officials and employees and dependents of MAF Region XI was registered in April 1981, is considered the only computerized coop in Region XI.

There were 1,110 listed as registered Samahang Nayons (SNs) during the year and 615 are considered active. However, only 394 SNs were maintained with a total membership of 13,879. There were 225 SNs inspected and audited, as well as 123 regular trainings conducted, the latter being only 60 per cent of the target of 206 trainings for the year, due to lack of training funds. About 102 of these SNs are engaged in economic activities.

The financing requirements of coops/SNs in the five provinces and 2 cities are being serviced by 4 CRBs located at South Cotabato, Davao del Norte, Davao City and Davao del Sur, respectively. The South Cotabato CRB has extended an asset of over P13 million and adjudged as the biggest and progressive CRB in the whole country during the anniversary celebration on September 22, 1984. The Agricultural Marketing Cooperatives (AMC) of Lupon, Davao Oriental, was also declared outstanding AMC in the country.

In seed and plant materials production, the area planted to palay and corn for seed production was 456 hectares and 11.3 hectares, registering 1,557.3 metric tons and 27 metric tons, respectively. This year's palay seed production is much lower compared to last year's 1,903 metric tons. The decrease is attributed to the non-availability of improved varieties, no price support of certified seeds (price equal to commercial seeds if not lower), and presence of pests like locusts and rats. Legume and corn production could not be fully implemented by the MAF-farmer cooperators due to lack of post-harvest facilities, thereby private seed growers were reluctant to take the risk. On the one hand, there were 129,631 seedlings of different fruit trees produced with a distribution accomplishment of 5,144 seedlings to clientele for free. Most of these planting materials were cacao seedlings. On the other hand, with the reports of other stations and seed farms not included, only Tupi Experiment Station turned out a total of 58,931

pieces of sexually and asexually assorted propagated fruit trees produced.

Incidences of various pest and disease infestations were significantly low during the year. Total area treated with chronic poison for rice, corn and other crops was 54,837 with 38,847 farmers as beneficiaries. Isolated occurrence of pests on palay occurred but were immediately controlled. These were all attributed to the improved monitoring system and the use of integrated pest management for rice and corn.

Plant quarantine was intensified thru a vigilant implementation of quarantine rules and regulations. As of year's end, 1,007 foreign vessels and 1,035 interisland vessels were boarded and inspected, as well as given clearance; 4,700 phytosanitary certificates issued; 222 commodity clearance certificates issued, and 4,144 domestic plant/product materials inspected and given clearance for domestic shipment.

Insofar as soil survey and classification is concerned, activities were mostly on pilot projects under E.O. 803 and LOI No. 1262, the latter being conducted in coordination with the Bureau of Forest Development on the sub-classification of forest lands. Total area covered was 88,168 hectares. In soil and water conservation, 502.6 hectares were covered and placed under erosion control. This also includes the service area of a 150-hectare small water impounding project located at Aumbay, Samal, Davao del Norte. Likewise, 5 soil fertility maps were updated; 41,044 hectares were surveyed and classified under soil capability classification; 28,994 hectares were surveyed under the land suitability studies; 18,130 hectares were surveyed for the production of soil base maps; and 43 investigations and verification trials conducted in support to both NFAC and URARTIP/PAG-ASA projects.

Special projects, among others, pursued by the region are the following:

1. *Azolla* — the region has exceeded its target in terms of hectareage planted to azolla. Its regional target for the year was 2,009 hectares, but its accomplishments covered 21,096 hectares, or 105 per cent. Provincial targets attained for Davao Oriental and Surigao del Sur, however, were only 50-60 per cent; while Davao del Norte and South Cotabato have exceeded their targets both Davao del Sur and Davao City accomplished 90 per cent of their targets.

2. *Expanded Yellow Corn Program* — Only 2 provinces are involved in this program, namely, South Cotabato and Davao del Sur. The province of South Cotabato produced 9,737.5 metric tons from an area of 7,457 hectares, while Davao del

Sur (no production report as of this writing) was not able to attain its targets due to the absence of a bank to provide loans to farmers.

3. *Soybean Program* — Lack of seeds and financing needed was the reason why the region was able to attain only 78.5 per cent accomplishments against targets. The weather which was suitable for corn planting during the year also contributed to the non-attainment of targets, some farmers already identified to plant soybean immediately planted their lands to corn. At any rate, 941 metric tons were produced from harvested areas of 682 hectares.

4. *Ipil-ipil* — It is an on-going project not supported with funds by the regional MAF, but by the Ministry of Human Settlements (MHS), thru its program as a livelihood project. However, funding has stopped lately. Private companies also have their ipil-ipil production program for use as propping materials for banana.

5. *Sweet Potato* — the region's target for sweet potato was 1,000 hectares but only 901 hectares were planted, or a total of 91 per cent. No production report was mentioned as of this writing.

REGION XII (Central Mindanao)

During the year in review, rice production in this region registered a total of 659,960 metric tons from both Masagana 99 and rice-sustaining areas, covering 216,170 hectares tilled by no less than 177,416 farmers. This production is higher than last year's 597,450 metric tons or an increase of 10.5 per cent.

Corn production both under the Masagana and unprogrammed areas yielded a total of 707,860 metric tons. This output is higher than the production obtained last year, which was 547,620 metric tons or an increase of 29.2 per cent. Some 100,480 farmers were involved in this endeavor and were served by field technicians.

In the promotion and development of livestock and poultry, activities and accomplishments were made in the areas of animal dispersal and breeder stock production; artificial insemination; immunization and prevention of animal diseases, including diagnostic services; veterinary quarantine inspection; beef/carabeef development; livestock marketing services; and forage and pasture development. Under the animal dispersal program, its breeding stations dispersed 114 animals of differ-

ent types to farmers to upgrade their current stock. Artificial insemination accounted for 1,170 large animals inseminated. Vaccination of large animals against HMD and HEMSEP totalled 17,323 and 12,898 respectively; swine plague and cholera — 23,396; poultry against fowl cholera, avian pest, roup and fowl pox — 92,481; and dogs against rabies — 729. It also diagnosed and treated 28,096 cattle and carabaos for liverfluke. On animal quarantine inspection, 70 foreign and domestic vessels were boarded/inspected and given clearance, while 16,489 head of various economic animals were inspected and given clearance in coming in and going out of the region.

Supportive to the livestock development program is the beef/carabeef program where emphasis was laid on the supervised credit program for livestock, particularly the Bakahang Barangay, Kalabaw ng Barangay, and the KKK agri-livestock projects. On this regard, 182 head of cattle and 75 carabaos were fattened and raised by 483 farmer/borrowers, and, at the same time 32 agri-livestock projects under the KKK were assisted by field technicians. Six livestock auction markets, on the other hand, have continued to maximize the profits of livestock farmers. As of year's end, 11,101 head of large animals were registered and sold thru these auction markets.

Along forage and pasture development, its regional farms and seedbanks were able to improve and develop 28 hectares by planting legumes, grasses and ipil-ipil trees. These farms serve as sources of planting materials for distribution to clientele/cooperators. As of December 31, 1984, the region was able to produce 198 kilograms of legume seeds and 5,582 ipil-ipil seedlings.

Vegetable production registered a total of 8,600.5 metric tons of assorted vegetables from 11,745 hectares tilled by 24,902 farmers. Fruit production likewise accounted for 3,570.5 metric tons; while field crops like mungo, cowpea and peanut registered 5774.5 metric tons planted by 2,939 farmers. Root crops, such as cassava, sweet potato and others, chalked up 532,209.5 metric tons produced by 20,886 farmers.

As in previous years, the development and expansion of plantation crops was relentlessly pursued. Table above shows plantation crops and their corresponding hectareage planted/harvested and production at year's end:

CROP	Area Planted (ha.)	Area Harvested (ha.)	Total Production (M.T)
1. Coffee	16,480	10,803	15,680.38
2. Cacao	1,589	1,558.6	1,244.68
3. Rubber	19,104	13,482	21,375.21
4. Coconut	20,697.9	154,061	973,238.20
5. Abaca	2,212	1,428	2,284.56
6. Sugarcane	9,841	—	50,189.81
7. Cotton	25	10	3
8. Banana	29,388.82	13,021	56,419.63
9. Papaya	15	5	6
10. Pineapple	10	6	1,211
11. Tobacco	5	2	4.4
12. Medicinal Plants	15	5	6

In the field of nutrition, intensive campaigns on nutrition education, prevention of malnutrition and rehabilitation, of malnourished children, home-yard production and income-generating projects were intensified. In nutrition education, activities were centered on breastfeeding, supplementary feeding and weighing of infants and pre-schoolers. There were 42,031 families, including 16,539 pregnant and lactating mothers, 37,034 infants, as well as 21,784 pre-schoolers served at home in Rural Improvement Children Club-Children Centers (RIC-CC), and Insumix Centers. Family members of the homemakers and rural improvement clubs numbering 80,425 involved themselves in productive endeavor like raising vegetables (KPMS), poultry and livestock production, fruit and vegetable production, and income-generating projects. Results of these activities accounted for 303,804 plants of kadios, papaya, malunggay and sequidilla trees; 280,188 chickens with a total meat production of 173,584 kilograms; 38,161 head of swine and goats with a total meat production of 1,807,706 kilograms; 1,924,135 kilograms of assorted fruits and vegetables, and 478,800 pieces of clothing, handicraft, and food trades.



Also engaged in these undertakings were 266 Anak Bukid Clubs, membership of which reached 7,563 composed of 2,401 in-school youths and 5,162 out-of-school youths engaged in livestock fattening and breeding poultry, vegetable and legume production, and other income-generating projects. These projects turned out 353 head of cattle fattened with a meat production of 93,512 kilograms; 212 head of cattle bred, 838 goats fattened; 2,508 swine and 9,342 chickens and ducks raised; and 3,755 pieces of assorted clothings and handicrafts, as well as 4,076 kilograms of food trades with a market value of P55,610.

Seed and plant materials production were given utmost attention as the region continuously maintained its crop production performance. The production and multiplication of high quality foundation, certified and registered seeds are the concern of the regional farm/stations, as well as the region's seed/producers associations. During the year in review, these stations and seed producers produced 11,274 cavans of rice seeds with a distribution performance of 8,733 cavans.

Hand in hand with crop production were activities along crop protection. With the yearly resurgence of rat infestation, which caused heavy damages to all food crops in the region, completely destroying 5,214.8 hectares and infesting 79,140 hectares out of 191,022 hectares, the MAF technicians were able to treat an area of 71,523 hectares and extend technical assistance to 44,032 farmers. On the blanketing operation side, 4,148 samples were taken covering an area of 11,163,426 square meters where 259,339 rats were killed.

As regards locust infestation, this year's occurrence was a continuation from last year's. The only difference was that the infestation last year consisted of few solitary locusts, which further developed into migratory phase. This year's infestations were of the migratory stage, which reached its peak during the months of February, March and April when the MAF regional office had experienced scarcity of funds. It was only during the months of May and June when operating funds were released that the control activities were greatly intensified and spraying operations were done within the Davao provinces along the North Cotabato-Sultan Kudarat boundaries.

Plant quarantine in the region was given impetus aimed at preventing the introduction into the region of injurious plant pests and diseases, as well as preventing the spread into other areas of indigenous pests and diseases present in its area of operation. On this aspect, there were 64 foreign vessels inspected/boarded and given clearances, 1,757 domestic vessels inspected/cleared for other ports, 8,204 pieces of plants confiscated and/or returned to place of origin; 531 plant products fumigated; 126,823,290 kilograms plant products inspected and allowed for shipment; and 1,352 pieces of assorted plant materials intercepted and disallowed for exit/entry.

Soil conservation and development services continues to be one of the region's major concern. Out of the 566,293 hectares and 350,000 hectares targeted for land capability classification and soil base map production, 533,000 hectares were classified and 333,000 hectares were documented, respective; 300 hectares were surveyed, as well as one earthdam being constructed under water impounding; 3,100 hectares placed under erosion control; 44 trials conducted under fertilizer utilization studies; 10 soil fertility maps updated; 39 trials conducted in support to NFAC programs; and 85 trials conducted in support to URARTIP and PAG-ASA projects.



Accomplishments of the Ministry of Agriculture and Food Staff Bureaus

BUREAU OF PLANT INDUSTRY

In its sustained effort to bolster the country's growth and development, the Bureau of Plant Industry (BPI) during Calendar Year 1984, geared its programs and activities on food and nutrition, export promotion, import substitution, and agro-energy development. This task was achieved through its five major programs, namely, 1) agricultural research; 2) crop production; 3) field trial services; 4) crop protection; and 5) plant quarantine services.

Under agricultural (crop) research, 255 research studies on various crops were conducted at different experiment stations strategically located throughout the country. Significant research findings were also developed along the lines of culture and management for white potato, rootcrops, cereals, vegetables and legumes, fruits and nuts, beverages and spices, as well as ornamentals and medicinal plants.

In agricultural engineering, the Bureau conducted researches aimed at designing and developing appropriate farm tools and implements for production and processing of food crops. As of year's end, 2 studies along this line were completed. Likewise, its industrial extension program was vigorously pursued with 11 studies completed along small farm equipment designs for the benefit of farmers and agricultural machinery manufacturers.

As regards crop production, intensified production of quality seeds of high-yielding varieties with genetic identity was carried out in its different experiment stations, seed farms and seed testing laboratories to sustain the country's seed requirements. From a total of 645 hectares planted to different agricultural crops, it produced 73,252 kilograms of various seeds with a distribution accomplishment of 692,737 kilograms. Also, 1,527,414 pieces of sexually and asexually planting materials were produced, 1,231,227 pieces of which were distributed.

With respect to field trial services, the Bureau accounted for 150 locational trials on cereal and feedgrains, vegetables and legumes, and plantations and export crops.

In crop protection, its Regional Crop Protection Surveillance and Early Warning System, (RCPC-SEWS) under the bilateral Philippine-German Crop protection programme covered no less than 919,390 hectares under the Masagana and Maisagana program and freed from solitary and transient locust infestation. Some 62,538 hectares were controlled from army worms and reduced losses caused by tungro and rat infestation.

The plant quarantine services continues to undertake pest risk analysis prior to issuance of import/export permit. Various insect pests in cereals, fruits, plants/plant products coming in and going out of the country were intercepted. Plant diseases in vegetables and fruits, as well as food provisions of crews on board ships, were also identified. Hence, rigid inspection and certification of important crop commodities were made.

Under the Special Projects, the Phytolium "Hanga" tree Project was given impetus. This project was started in 1981 to develop the oil plan "hanga" as an alternative indigenous source of energy to help abate the huge annual importation of crude oil that drains the country's foreign exchange reserves. Along this line, 137,871 planting materials were produced. No less than 114 hectares are now planted to this tree. For its expanded seed production and distribution project, the Bureau of Plant Industry covered 484.5 hectares planted to various crops which produced 1,462,351 kilograms. Seed distribution totalled 1,587,553 kilograms including previous year's balance.

Also a special project of the Bureau is the Peppermint and Citronella project. Oils extracted from these plants are used for flavoring and in the manufacture of soap, perfume, shampoo, and other related products. Tapped by the BPI to participate in this endeavor is the private sector. Component sites in research and production had been selected in the Visayas and Mindanao. At year's end, about 16 hectares had been planted to peppermint and citronella.

BUREAU OF AGRICULTURAL EXTENSION

The strengthening of agricultural extension services remains the responsibility of the Bureau of Agricultural Extension (BAEx) in the overall national effort to uplift the standard of living in the countryside. As in previous years and pursuant to the provisions of PD No. 1579, BAEx provided

staff support to the Ministry of Agriculture and Food in the effective delivery of agricultural extension services.

During Calendar Year 1984, the Bureau's key programs were focused on agricultural extension, home economics extension, rural youth development, mass communication and information and human resources development.

Activities on agricultural extension involved, among others, the designing, preparation and packaging of appropriate technology for verification/demonstration trials on crops and livestock. On this aspect, the BAEx distributed 1,435 kits to the same number of cooperator-beneficiaries, produced and developed 57 resource materials (technical formats, manuals, bulletins, brochures and pamphlets); and conducted/assisted 193 trainings, meetings and conferences, aside from the numerous assistance in the conduct of the training program for MAF extension personnel provided by the BAEx's subject matter specialists who developed and served as resource persons in the series of project seminar/workshop/symposium in agricultural extension.

The Bureau likewise carried out other substantial activities on home economics extension, particularly on the development of innovative extension techniques on improved nutrition, home management practices, income-generating projects and institutional development for the rural youth. In food and nutrition management, 51 specialists trainings and workshops were conducted for 844 participants while in home management practices, 72 trainings were conducted wherein 892 home extension personnel and 600 RIC leaders participated.

For rural youth development, 921 out-of-school youths (OSYs) were assisted regarding farm extension teaching trials and 1,527 OSYs along the KASAKA program.

Along staff and clientele training and development, there were 1,547 participants for local in-service trainings and 44 participants for overseas training in both degree and non-degree courses.

BUREAU OF ANIMAL INDUSTRY

In Calendar Year, 1984, the Bureau of Animal Industry's (BAI) four major livestock supervised credit programs for smallholders suffered slight setbacks due to the slack in credit facilities to the rural banks in the form of special time deposits (STDs) as well as the rediscounting window of the Central Bank of the Philippines (CBP) following the

government's program to map up excess liquidity.

Notwithstanding, however, the financial restraint on the part of the government, the private sector, through the rural banks, which are utilized as conduits for the credit facilities intended for the smallholder livestock supervised credit program of the MAF and the CBP, continued to support livestock production, which is predominantly in the hands of smallholder farms and farmers. Accomplishments made under the four supervised credit programs are as follows:

1. **Bakahang Barangay Fattening** — This program, launched in September 1977, has been the most popular livestock supervised credit program among small farmers and rural banks. Hereunder are highlights of accomplishments for Calendar Years 1982, 1983 and 1984:



Particulars	1982	1983	1984	1982-1983	1983-1984
No. of provinces covered	62	68	69	—	1.47
No. of accredited RBs	544	592	601	8.82	1.52
No. of Project Borrowers	38,550	30,085	9,606	(21.95)	(68.07)
No. of animals financed	77,262	55,993	2,101	(27.52)	(62.31)
Amt. of loans granted (PM)	238,807	166,021	73,858	(30.47)	(55.51)
Estimated incremental					
LW of 100 kg/hd (MT)	7,728	5,595	21,101	(27.60)	(62.29)
% Repayment	95	93	02	2.10	1.07

2. **Bakahang Barangay Cow-Calf/Palahian** — Launched in April 1982 to implement the cattle breeding portion, this program is actually a backyard linkage to the Bakahang Barangay Program.

Highlights of accomplishments are indicated below:

Particulars	1982	1983	1984	Growth Rate %	
				1982-1983	1983-1984
No. of provinces covered	22	39	50	77.27	28.20
No. of accredited RBs	26	101	140	288.46	38.61
No. of Project Borrowers	176	941	169	434.6	(82.0%)
No. of animals financed	545	1,742	337	219.6	(80.6)
Amt. of loans granted (PM)	1.805	5,952	1.350	229.7	(77.3)

3. **Kambingang Barangay Program** — This particular supervised credit program for goat production is now on its fifth year, having been launched in December 1979. Its accomplishments from 1982 up to this year are indicated hereunder:

Particulars	1982	1983	1984	Growth Rate, %	
				1982-1983	1983-1984
No. of provinces covered	62	62	68	—	9.67
No. of accredited RBs	492	542	577	10.16	6.45
No. of Project Borrowers	5,437	4,328	2,072	(20.39)	(52.12)
No. of animals financed	37,240	21,643	10,357	(41.88)	(52.14)
Amt. of loans granted (PM)	10,508	5,952	2,989	(43.35)	(49.78)

4. **Kalabaw ng Barangay Program** — Now on its second year of implementation, this program was launched to enable smallholders to own their work animals and thereby increase their farm output and productivity. Table shows the accomplishments so far made under this program:

Particulars	1983	1984	1983-1984
No. of provinces covered	48	51	6.25%
No. of accredited RBS	184	219	19.02%
No. of Project Borrowers	425	324	(23.76)
No. of animals financed	425	324	(23.76)
Amt. of loans granted (PM)	1,702	1,298	(23.73)

Insofar as the Livestock Commodity Loan for animal dispersal for CY 1984 is concerned, the bureau dispersed 218 cattle, 7 carabaos, 209 goats and 705 swine. Compared to last year's, this year's dispersal is lesser due to lack of budgetary appropriations.

However, as a means to increase agricultural productivity, especially among smallholders, the BAI has stepped up its support to livestock production by organizing integrated farming projects in some regions. For instance, the ASEAN Goat and Sheep Center in Pagadian City in Mindanao (established in 1983) has now branched out with satellites in Regions I and VIII; by next year, five more branches will be set up in other regions of the country. Four other integrated farming projects with sheep and goats as base livestock were established in Regions I, IV, V and VIII.

Along dairy development program, milk production and collection during the year in review was done in 11 dairy plants/farms/projects. A total of 106,772 liters was produced at the government farms and 271,393 liters was collected from farmers, making a combined total of 378,165 liters. Most of the milk was sold as pasteurized milk to institutionalize fresh milk consumption, as well as to encourage milk production. A smaller portion of the milk was used for processing dairy products, and the rest was set aside for the



milk-feeding program, in support to the national nutrition program. On this aspect, the bureau provided 262,694 liters of fresh milk and 328,639 liters of toned milk (using 27,000 kilogram skim milk) to 50 day-care centers and 67 schools. This outreach program benefitted 5,757 pre-school children and 7,064 school children, or almost 13 million children. This program is expected to reach some 14,000 children in 1985.

As regards, livestock marketing services, there were 14 livestock "OKSYON" markets established during the year, which brings to an overall total of 87 the number of livestock auction markets established at strategic locations in the country since 1983. This year's accomplishment outstrips that of last year's where only two livestock markets were put up.

The rolling stores selling meat and meat products under a socialized scheme intended to cushion consumers from the effects of spiralling prices made a total of P3.7 million in sales. In support of the NFA/KADIWA program of the government, the rolling stores have benefitted government employees and other low-income families in the metropolis and neighboring provinces. Also, to keep livestock and poultry producers and entrepreneurs abreast with the developments in livestock marketing, price information and other matters related to business, a couple of publications are being put out — Market News, which comes out weekly with 150 copies per issue, and the Livestock and Poultry Bulletin which comes out monthly, also with 150 copies per issue. With the recurring inflation, prices of livestock and poultry commodities are being monitored regularly.

On accreditation of abattoirs, five new abattoirs were established and accredited this year, bringing to a total of 128 accredited abattoirs since 1973.

Highlighting the BAI's 1984 accomplishments among others, in the major programs implementing livestock support services are the following:

1. Animal health and disease control —

Massive vaccination of different animal species against various diseases broken down as follows: 132,248 animals against hoof-and-mouth disease (HMD); 406,684 animals against hemorrhagic septicemia (hemsep); 31,237 animals against anthrax, and 36,773 large animals against blackleg. In the treatment of sick animals, the carabao got the highest attention among large animals; while poultry got the highest number among small animals with more

than one million head treated. All in all, a total of 1.8 millions animals was treated at year's end.

2. Animal feed control — As of December 31, 1984, registered feedmillers, feeddealers, and other establishments in the feedmilling industry totalled 3,930. This registration and licensing activity brought a collection of P610,831, or an 81 per cent increase over last year's collection, which was only about P342,000. On the other hand, feed samples collected and analyzed totalled 16,716.

BUREAU OF AGRICULTURAL ECONOMICS

During the year under review, the Bureau of Agricultural Economics (BAEcon) continued to perform its vital function as the major agricultural data-collecting agency of the government. Encompassing this diversified and widely ranging function were the preparation of agricultural estimates and statistics, economic researches, and agricultural marketing publication.

BAEcon's accomplishments included sample surveys to obtain current statistics on crops and livestock, economic studies and surveys to support rural development and improve farm productivity, statistical research studies through pilot projects to improve the quality of agricultural statistics, agricultural information system to assess current agricultural situation, special surveys undertaken with other government offices, and marketing services in behalf of the farmers in particular, other producers, and the traders in the agribusiness sector.

In agricultural statistics, BAEcon conducted the most extensive surveys on staple food crops, especially rice and corn, covering all the provinces and involving some 30,000 sample barangays, to derive area and production estimates for purposes of policy formulation and planning.

The yearly livestock and poultry surveys were also conducted to update the country's animal population, showing national, regional and provincial totals, and population according to classification as backyard or small farms, and commercial or large farms.

Regular surveys were also conducted on the monthly rice and corn stocks, and provincial and regional data on typhoon damages of major crops were also consolidated. Statistics on other crops, fruits and vegetables were likewise collected periodically.

BAEcon also conducted special surveys to assess the output of pilot projects under E.O. 803, and the fertilizer usage by farmers on selected agricul-

tural crops.

To significantly contribute to policy makers in the enhancement of accelerated production and increased farm incomes of the Ministry's farmer-clientele, BAEcon conducted economic research studies on agricultural diversification and markets of farm produce, wage rates survey of farm workers, the teaching of farm record-keeping to generate essential data for business analysis, the investment and export potential of the Philippine coffee, use and effect of credit in backyard swine production, among others.

A continuing major research of BAEcon, the Agricultural Diversification and Markets in the Philippines, otherwise known as Project ADAM, has completed the national and regional costs and returns analysis for rice, corn, and onion production. Presently being undertaken under this project are the costs and returns studies on abaca, cabbage, chayote, cotton, ginger, wheat, pechay, soybean, sorghum, tomato, raddish and squash.

Project ADAM has also started developing linear programming models for the agricultural sector. When completed and applied in production planning and programming, it is expected that the farmers in particular, and the economy in general, will substantially benefit from the computational techniques in cost minimization and benefit maximization.

A joint BAEcon-PCARRD undertaking is the Impact-Assessment of the Philippine Fertilizer Program on manufacturers, distributors and traders, land utilization, agricultural employment and income, and agricultural production. Undertaken singly by the bureau is an extensive Socio-Economic Study of Brackishwater Fishing. The study focuses on costs and returns analysis, profitable analysis and management practices among fishpond owners.

In policy analysis, BAEcon's staff has coordinated with the components of the Rainfed Resources and Development Project (RRDP) in developing data base and analysis for rainfed agriculture in RRDP priority regions. It has also attended primarily to the development of comprehensive regional profiles for Regions 5, 6 and 8, and prepared an outlook of selected commodities.

Relative to policy analysis, ten economic studies were completed in 1984, some of which were an Evaluation of the Dollar Saving Potentials of Soybean, Ipil-Ipil, Yellow Corn, Sweet Potato and Azolla; Methodical Experience in Analyzing and Assessing Corn Demand in the Philippines; Analysis of Price Statistics Data in the Philippines; and Inter-Agency Study on Coconut and Sugar Industry's Production Aspects.

Six major reports were also submitted for policy formulation in agriculture among which are the Compilation of Programs and Thrusts for the Various Agricultural Commodities; Patterris and Levels of Fertilizer and Pesticides; and Fertilizer Situation and Outlook.

To promote the establishment of an efficient and effective marketing of the nation's farm produce, BAEcon has gathered, analyzed, evaluated, processed and distributed through its Agricultural Marketing News Services (AMNEWS), on a frequency of three times a week, market price information on 134 agricultural commodities sold in 11 public markets in Metro Manila and 38 provincial trading centers.

BUREAU OF SOILS

The Bureau of Soils (BS) during the year just ended, pursued the following programs/projects:

Agricultural Development and Planning: (1) land capability classification, (2) agricultural land use zonification, (3) soil taxonomic classification and interpretation, (4) reclassification of agricultural crop lands (presently) classified as alienable and disposable, and (5) production of soil base maps;



Sustained Economic Agricultural Production: (1) technology packaging of soil resources conservation and management programs, (2) agro-hydrometeorological studies for soil and water conservation and management, (3) conservation, management and maintenance of water impounding structures in Samar and Leyte, (4) soil fertility management systems, (5) conduct of fertilizer verification trials, (6) culture and propagation of

azolla, and production of organic fertilizers; (7) updating of soil fertility maps; (8) testing and analysis of soil samples as basis for fertilizer recommendations; and (9) isolation, production and quality testing of soil inoculants (for legume crops);

Soil Research, basic and applied: (1) management problem soils, (2) soil correlation and land management suitability studies, (3) soil and plant studies utilizing radio-isotope techniques;



Infrastructure Program: (1) preparation of engineering designs, cost estimates and economic analysis for water impounding projects, (2) feasibility studies for the National Water Impounding Project, and (3) construction of water impounding structures in Iloilo under the Rainfed Agricultural Development Project;

Regulatory Functions: (1) quality control of organic and inorganic fertilizers; and (2) supervision, regulation and control of the establishment and operation of soil laboratories in the Philippines; and

Administrative Support and Manpower Development: (1) exercise of general management and direct supervision, and (2) staff development, including training and scholarships for all employees.

Hereunder are some of the highlights of the Bureau of Soils accomplishments during CY 1984:

Purpose	Accomplishment hectares (ha)
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Conduct of land capability classification services:

Quezon Province	144,725
Albay	179,201
Camarines Sur	162,040
Cebu	2,545
Zamboanga del Norte	25,341
Bukidnon	163,957
Misamis Occidental	71,482
South Cotabato	30,000
Sultan Kudarat	17,688
Total	774,777 ha.

Agricultural land use zonification and the subclassification of public lands as per P.D. 705 and LOI No. 1262:

Batangas	2,000
Quezon Province	85,359
Bukidnon	31,187
Lanao del Sur	140
Sultan Kudarat	3,895
Total	121,881 ha.

Reclassification of agricultural crop lands classified as alienable and disposable:

Ilocos Norte	164,320
La Union	359,155
Quezon Province	568,502

Purpose	Accomplishment (ha.)
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Cebu	22,207
Zamboanga del Norte	635,524
Agusan del Norte	215,800
Agusan del-Sur	448,868
Bukidnon	636,853
Misamis Occidental	89,518
South Cotabato	290,668
Gen. Santos City	20,000
Lanao del Sur	195,247
Sultan Kudarat	140,617
Total	3,545,279

Soil Taxonomic classification and interpretation:

Bulacan	45,261
Laguna	82,984
Quezon Province	1,000
Misamis Oriental	78,479
Total	<u>207,724</u>

BUREAU OF COOPERATIVES DEVELOPMENT

The Bureau of Cooperatives Development (BCOD), which is responsible for the development of cooperatives in the country, has, as of year's end, organized 19,641 Samahang Nayons (SNs) with 920,412 members. Some 16,333 SNs were registered comprising a membership of 693,399. These SNs have proven their capability of generating their own funds to finance their activities through the General Funds, Barrio Guarantee Funds, and the Barrio Savings Funds. As of December 31, 1984, these SNs have managed to accumulate a total of P98,399,373, as follows:

1. General Fund	P21,611 million
2. Barangay Savings Fund ...	43,257 million
3. Barangay Guarantee Fund.	<u>33,331 million</u>
Total	P98,399 million

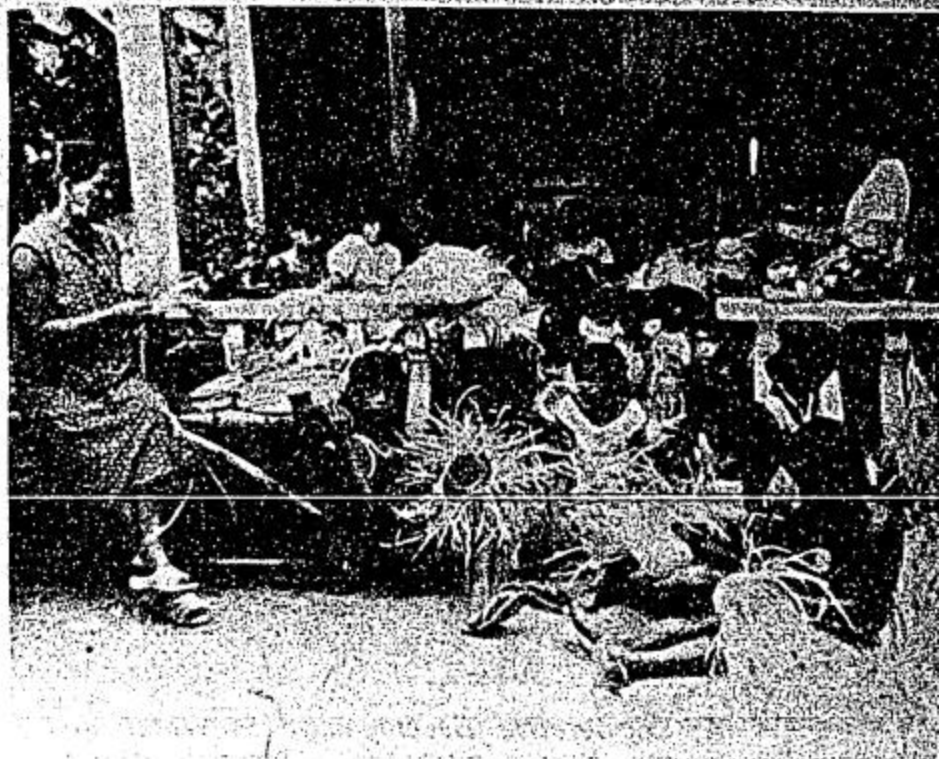
In Area Marketing Cooperatives Sub-program (AMCs) which is one of two secondary cooperatives acting as the marketing/purchasing arm of SN members to ensure systematized marketing members' produce and improve their bargaining position, there are now 65 AMCs organized, but only 40 are operational. All in all, their authorized capital as of December 1984 amounted to P131,780,000.

The Cooperative Rural Banks Sub-Program (CRBs), another secondary cooperative which attends to the banking needs of its members, as of the latest count, accounted for 41 CRBs organized, 28 of which were registered and licensed to operate by the Monetary Board with an authorized capital of P160.5 million. Its resources by yearend totalled P70,610,949 in subscribed capital and P59,451.58 in paid-up capital.

With regard to the Cooperative Marketing Project (CMP), which finances marketing system for essential agricultural commodities produced by small farmers, this project has extended loans totalling P40.7 million to 15 AMCs, 1 livestock project and 1 federation of AMC.

A joint project of the BCOD, USAID and NEDA is the Samahang Nayon Support Project (SNSP), which extends loans, training and education

assistance to strengthen their organizational and financial base. The SNSP has extended loans totalling P4.2 million to over 10,000 members. Loan repayment performance has been fairly good at 70 per cent out of the total amount due of P1,106,406.26.



Insofar as the Samahang Nayon Action Program Kilusang Kabuhayan at Kaunlaran (SNAP-KKK) is concerned, cooperatives situated in all the 12 regions of the country undertaking projects under the KKK with 185 SNs beneficiaries have already received P8.8 million in loans from the Cooperative Development Loan Fund (CDLF). Loans covered were on setting up of production facilities, crop production, aquamarine and marketing projects.

The Bureau likewise carried out other substantial activities, among which were the following:

1) *Intensified Rice Production Program (IRPP) and Expanded Yellow Corn Program (EYCP)* — BCOD encouraged Cooperative Rural Banks to participate in facilitating the credit delivery scheme under the IRPP and EYCP for rice and corn producers. As a result, 14 out of 20 IRPP target provinces now have operating CRBs while 13 out of 17 EYCP target provinces have operating CRBs;

2) *Samahang Nayons in Sweet Potato, Cassava and other root tuber production* — Due to the market potentials of these products, the Bureau encouraged SN members to produce sweet potato, cassava and other root tubers, with the local livestock industry and the export market as their outlets;

3) *Rural Improvement Club Cooperatives Project (RIC)*, in which long-existing RICs, composed of women farm hands or rural house-

wives, were organized not only as a potent, vital line force in the promotion of the goals of cooperativism, but also to assist them obtain loans for such varied livelihood projects like fish canning and processing. As of years' end, the project has loaned out P150,000 to three RIC cooperatives; and



4) *Cooperative Development in Water Impounding Project (WIP) sites* — This project is a component of the KABSACA program, aimed to provide irrigation to rainfed farm areas during the dry season by constructing water impounding dams in selected areas in Region VI. Of particular relevance to this WIP is the organization of target farmer beneficiaries within the damsite areas which the BCOD was tasked to organize into cooperatives, train them on cooperatives, water management, marketing and production management. To date, 36 water impounding dams had been constructed under this project benefitting 405 farmers and servicing 806.2 hectares of farm lands.

BUREAU OF FISHERIES AND AQUATIC RESOURCES

The government, cognizant of the ever increasing economic adversities, has adopted innovative strategies in administering government programs, especially to accelerate development in agriculture and increase food production. Drawing up an integrated agricultural development packages for greater production of crops, livestock, poultry and fisheries under existing resources, not only to achieve self-sufficiency in food but also to expand and diversify production for export, is one of the major objectives of Executive Order 967, issued on June 30, 1984. Further pursuant to these objectives, the Executive Order mandated the transfer of Bureau of Fisheries

and Aquatic Resources (BFAR) from the Ministry of Natural Resources to the Ministry of Agriculture and Food.

In 1984, the BFAR's key programs centered on the management, development, conservation, protection, and proper utilization of the country's fishery resources.

One of the projects being pursued by the BFAR in 1984 was the production of 41.3 million fingerlings in various aquatic farms of the bureau, and the dispersal of no less than 34 million of these fingerlings to communal bodies of waters, such as Lakes Paoay, Buhi, Daa, Danao, Taal, Naujan, Pantabangan dam, Fort Magsaysay dam, Ibjam dam, Bohol, Dauis, Jalaur and Abra rivers.

Seafarming, which is one aspect of fish culture utilizing the marine water areas along the coasts, coves, and estuaries, was also vigorously pursued. Fish culture, which is also seafarming, includes the culture of marine fishes, mollusks, seaweeds and other marine fauna and flora. Enhancing the adoption of technology along these marine areas are 40 seafarming projects serving as demonstration centers or show windows of seafarming and fish culture innovations, which would help marginal fishermen find alternative sources of income and job opportunities. The impact of seafarming on the private sector is manifested in the increasing number of individuals venturing into this industry. Technical assistance and provision of seedlings and breeders to cooperators are now services being undertaken to promote seafarming.

The National Bangus Breeding Program, a joint venture of BFAR and South East Asia Fishery Development Center (SEAFDEC) aims to accelerate the development of simplified technology for propagating milkfish and test its economic viability



for commercial application. A corollary objective is to increase fry supply both in selected natural fry grounds and through hatchery production. Since its launching in 1981, by virtue of a Presidential Memorandum, floating cages were set up in twelve sites all over the country, viz: Pasuquin, Ilocos Norte; Alaminos, Pangasinan; Masinloc, Zambales; Puerto Princesa City, Palawan; Sorsogon, Sorsogon; Nueva Valencial, Guimaras; Calape, Bohol; Babatngan, Leyte; Sangali, Zamboanga City; Baliangao, Misamis Occ; Sta. Cruz, Davao del Sur; and Parang, Maguindanao.

Conservation measures and law enforcement have always been the priority concern of the bureau. During the period covered, 243 municipal ordinances/resolutions/contracts were processed and acted upon, while 6 Fishery Administrative Orders and one Memo Circular were promulgated for implementation. On the other hand, there were 311 apprehensions made for illegal fishing, such as the use of explosives, obnoxious substances, fine mesh nets and other infractions of fishery laws, rules and regulations.

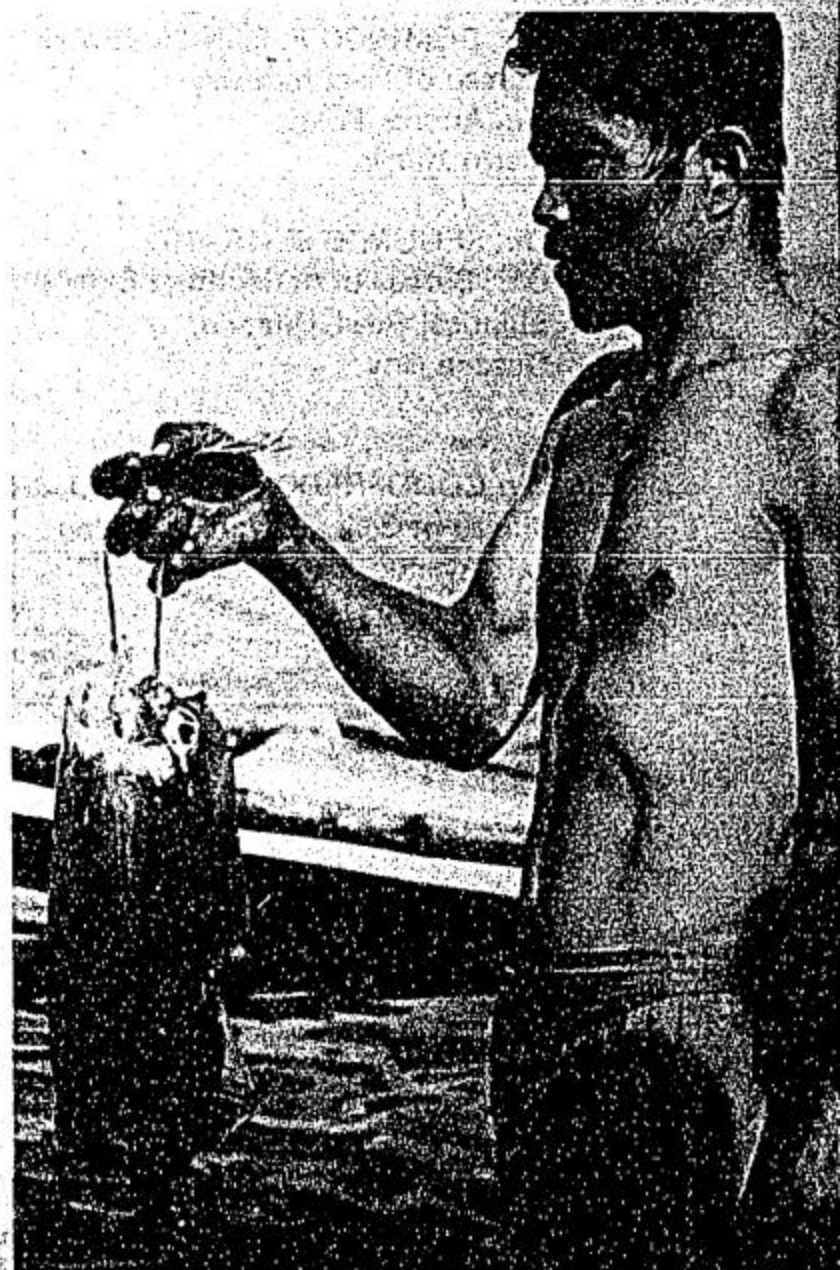
The year also witnessed the active participation of the bureau through its involvement in the Kilusang Kabuhayan at Kaunlaran (KKK) project.

Likewise, the Biyayang Dagat Program (BDP) was vigorously pursued. Launched in September 1979, pursuant to a Presidential directive under LOI's 791 and 868, providing liberalized credit to small and medium-scale fishermen, with the cooperation of financing institutions, a total of P2.8 million was released to 250 fishermen during the year in review. To date, 2,681 loan applications have been submitted to different financing institutions and 1,634 fishermen are still being assisted by BFAR extension workers.

In 1984, the Philippines exported a total of 22,082 metric tons of fish and other fishery products valued at P968.6 million. The ten major fishery exports in terms of peso value are, as follows:

<u>Fishery Product</u>	<u>Quantity Kilograms</u>	<u>Value (P)</u>
1. Chilled/frozen shrimp	5,517,510	486,551,891.23
2. Chilled tuna (sashimi)	3,014,504	100,130,035.90
3. Shellcraft articles	287,217	80,043,597.17
4. Aquarium fishes	427,685	50,617,295.27
5. Frozen tuna	2,864,143	34,831,206.76
6. Chilled assorted frozen fish	3,530,493	31,667,015.61
7. Frozen milkfish	1,354,883	29,271,618.43
8. Frozen cuttlefish fillet	560,590	23,074,693.96
9. Dried sea cucumber	1,041,816	12,485,626.62
10. Shark liveroil	216,419	11,688,549.61

Initial report for fishery imports for CY 1984, was 2,165 metric tons valued at P15.6 million. Of this amount, 83 percent was for fish meal; 14 percent for fresh/frozen chilled fish/crustacean; 2 percent for salted, dried and smoked fish; and 1 percent for canned fish.



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